Comment [j1]: Overall recommendation to use "active" voice throughout the report. Otherwise it is difficult to tell who is responsible or accountable. Also using passive voice results in very confusing and poorly written language.

Alaska's
Draft
2010 Integrated Water
Quality Monitoring and
Assessment Report
December 28, 2009

Alaska
Department of Environmental Conservation

ist of Tables

1. Introduction—Purpose and Approach

In addition, this report describes the process for evaluating whether waterbodies attain water quality standards or are impaired (polluted). This process includes classifying each waterbody according to five categories, depending on their health; determining which waterbodies need further action; scheduling when each impaired waterbody will be addressed; involving the public in determining how water quality will be addressed; and determining how waterbodies are removed from the impaired waterbody list.

DEC water quality programs are described in Appendix F.

Assessment Results

Alaska is rich in water quantity, water quality, and aquatic resources; almost half of the total surface waters of the United States are located within the state. Because of the size, sparse population, and remote character of Alaska, the vast majority of its water resources are in pristine condition. More than 99.9% of Alaska's waters are considered unimpaired. Among the state's vast water resources are more than 3 million lakes, 714,004 miles of streams and rivers, 36,000 miles of coastline, and approximately 179,043,000 acres of fresh water and tidal wetlands. Less than 0.1% of these water resources have been identified as impaired. Historically, Alaska's water quality assessments have focused on areas with known or suspected water quality impairments.

In Alaska, surface fresh water supplies three-fourths of water needed for industry, agriculture, mining, fish processing, and public water use and is used for about half of the domestic water supply. Alaska's surface waters include more than 15,000 salmon streams, an important resource for Alaskans and the world. Alaska also has the largest groundwater resources of any state.

Alaska is sparsely populated, having approximately 686,000 residents (approximately one resident per square mile). Urban development is concentrated in a few main population centers, and the majority of people live in southcentral Alaska. The 2007-2008 U.S. census showed population increased since the previous census in most areas of the state. Almost 50% of the state's population lives in the Municipality of Anchorage in southcentral Alaska. The other major population centers are Juneau, the state capital, in southeast Alaska, and Fairbanks in interior Alaska. Communities outside these major population centers tend to be small and generally not connected by roads. The table below provides information about Alaska.

Comment [j2]: Does not schedule all impaired waters—only Category 5, not Category 4 waters.

Comment [j3]: Of the assessed waters, what percent have been determined to be impaired?

1. Introduction—Purpose and Approach

- source of pollution such as nuisance aquatic plants, degraded habitat, or a dam that affects flow.
- Category 5. Water quality standards for one or more designated uses are not attained and the waterbody requires a TMDL or recovery plan. Category 5 waters are those waters identified on the Section 303(d) list of impaired waters.

The following table summarizes the number of waterbodies in each category as determined by the evaluation of existing and readily available water quality data and information reviewed for this draft 2010 Integrated Report.

Category	Number of Waterbodies	
1	Majority of Alaskan waters	
2	44	
3	303	
4a	32	
4b	4	
4c	0	
5	237	

Alaska's Approach to Impaired Waterbodies

Alaska's process for listing a individual waterbody for failure to meet water quality standards, as required in the CWA Section 303(d), begins with an internal review of existing and new information to determine (1) the presence of pollutants, (2) whether persistent exceedances of water quality standards are occurring, (3) whether impacts on the designated uses are occurring, and (4) the degree to which water quality standards and the other criteria are attained. Appendix I: Supplemental Listing Methodology describes the specific criteria used for evaluation and listing of waterbodies are associated with residue discharges from log transfer or seafood processing facilities, turbidity and pathogens.

When a waterbody is placed on the Section 303(d) list, a TMDL-or recovery plan is developed, unless data obtained after the listing indicates that the waterbody is no longer impaired or other measures are undertaken to restore the waterbody. State of Alaska waterbodies on the Section 303(d) list are scheduled for development of a TMDL (see Appendix C) or waterbody recovery plan-between now and 2014. Specific criteria apply for delisting of impaired waterbodies.

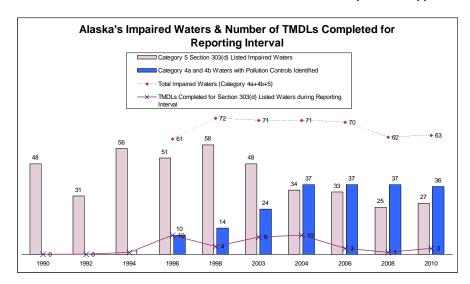
When DEC proposes a TMDL, DEC initiates or waterbody recovery plan is developed, a public process is initiated to allow all interested parties to review and comment on the TMDL. Many TMDLs include TMDL implementation and monitoring recommendations. As part of the process, the public is notified of the document and can comment on it.

Comment [j4]: A TMDL is not a recovery plan. ADEC correctly defines a TMDL as a "pollution budget" designed to restore the health of a waterbody. A TMDL calculates the amount of a specific pollutant that a waterbody can receive and still maintain Alaska's water quality standards. See page 85. Suggest including the definition in a footnote. ADEC refers to TMDLs as recovery plans throughout the IR which is incorrect and misleading and should be corrected.

Comment [j5]: ADEC revised this number to 31; however I only count 30.

Comment [j6]: Recommend using active voice throughout the report.

1. Introduction—Purpose and Approach



Significant Changes from Alaska's 2008 Integrated Water Quality Assessment Report

This 2010 Integrated Report documents the following water quality impairment changes from the 2008 Integrated Report:

- Addition of 15 new impairments to the Section 303(d) list of impaired waters (Category 5):
 - Coffman Cove Cereeks -- consisting of ten creeks, impaired from cadmium, copper, iron, manganese, nickel, and zinc
 - Kendrick Creek impaired from radioactive contaminants, gross alpha and gross beta
 - o Kuskokwim River impaired from antimony, arsenic, and mercury
 - o Little Susitna River -impaired from total aromatic hydrocarbons
 - o Red Devil Creek impaired from antimony, arsenic, and mercury
 - o Salt Chuck Bay - impaired from copper
- Waters removed from the Section 303(d) list:
 - o Caribou Creek—Thise creekwater is meeting the turbidity standard.
 - Iliuliuk Bay—Thise bay ishas been found to be meeting petroleum hydrocarbon standards.
 - Jewel Lake— This lake is meeting is water is no longer impaired from the fecal coliform bacteria standard.
 - Kenai River —Th<u>ise</u> river <u>ishas been found to be</u> meeting the petroleum hydrocarbons standard.

Comment [j7]: For the table above, please provide a scale on the vertical axis and change 2003 to 2002 as the reports are labeled by year due, not year submitted.

Comment [j8]: Recommend consistency for the bullets below. See editorial suggestions below.

Comment [j9]: This waterbody is no longer being included in Category 5. Is this of concern to EPA?

1. Introduction—Purpose and Approach

- Nakwasina River—Thise riverwater is meeting the turbidity and sediment standards.
- Impaired waters with an EPA-approved TMDL now under a plan:
 - Jordan Creek—<u>impaired_A TMDL has been developed</u> for sediment and dissolved oxygen.
 - o Klag Bay—<u>impaired for A TMDL has been developed for metals.</u>
 - Noyes Slough <u>impaired A TMDL has been developed</u> for residues <u>(still in Category 5 for , it remains impaired from sediment and petroleum hydrocarbon impairments.
 </u>
- Modification of <u>impaired</u> waters <u>(in Categories 4 and 5)</u> with impairments removed:
 - Cottonwood Creek—This <u>creekwater</u> is no longer impaired from residues; however, seven miles of the creek are being listed for fecal coliform bacteria.
 - Chena River—This <u>riverwater</u> is no longer impaired from petroleum hydrocarbons <u>and</u>; it remains listed for sediment.
 - Chena Slough—This <u>sloughwater</u> is no longer impaired from petroleum hydrocarbons and <u>it</u>-remains listed for sediment
 - Dutch Harbor—Most of thise harbor has been found to be meeting <u>petroleum</u> <u>hydrocarbon</u> standards but areas of impairment still exist.
 - Hood/Spenard Lakes—These lakesis water areis no longer impaired from fecal coliform bacteria and, it remains impaired from low dissolved oxygen.
 - Ward Cove—This <u>cove</u>water is no longer impaired from sediment toxicity <u>and</u>;
 # remains impaired for residues.

DEC proposes a nNew listing and assessment methodology has been proposed for pathogens. DEC made nNo impairment determinations based on this new methodology were made in this 2010 Integrated Report. The new listing and assessment methodology proposed for pathogens does not change the fecal coliform bacteria criterion within Alaska's water quality standards (in 18 AAC 70); however, it does provide direction for implementing the criterion when making water quality attainment or impairment determinations.

Other broader changes reflected in the 2010 report include the following:

- Six new waterbodies are reported in Category 3 because waters were added to the DEC water quality assessment database, which now identifies 303 Category 3 waterbodies.
- DEC updated nNarratives were updated based on existing and readily available information, including -uUpdates to Category 4a waterbody narratives were completed to describe development of a TMDL.
- ACWA waterbody priority rankings are included in Appendix H.

Comment [j10]: Use of the term a plan is incorrect as a TMDL is NOT a plan. The language should be an EPA-approved TMDL

Comment [j11]: Which specific waterbodies were added? Please rewrite this portion of the sentence as it is confusing as to what is meant.

1. Introduction—Purpose and Approach

DEC upated sSome descriptions of water quality management programs were updated in Appendix F.

Public Process Overview

DEC has an open, ongoing solicitation for water quality data and information. To solicit ACWA waterbody nominations, DEC coordinates a continuous effort among state resource agencies. During the preparation and development of Alaska's 2010 Integrated Report, DEC actively solicited readily available and existing water quality data and information for use in preparing the 2010 Integrated Report.

DEC posted a public notice solicitation for existing and readily available water quality data and information from August 3 to September 18, 2009. <u>DEC is conducting aA 30-day</u> public review and comment of this draft 20120 Integrated Report was provided from December 28, 2009, to January 29, 2010.

DEC <u>will_considered</u> public comments on the public notice draft of the report and makde necessary changes to theis final report. <u>DEC will prepare aA</u> responsiveness summary on the public comments received on the draft report has been prepared.

Comment [j12]: Were any waterbodies nominated during this public notice solicitation? If

Description of Categories and Overview of Assessment Methodology and Results

This section of the Integrated Report describes the process used by the State of Alaska to evaluate the nature, health, and status of waterbodies. This evaluation process includes assigning waterbodies into five categories, depending on their health; determining which waterbodies need further action; scheduling when each polluted or impaired waterbody will be addressed; and involving the public in determining how waterbodies will be addressed. (Figure D-1, Logic Flow Diagram for Making Category Determinations, in Appendix D portrays the logic of assigning waterbodies to categories.) Section 303(d) requires that for waterbodies found to be impaired or polluted, a TMDL must be conducted and implemented. A waterbody recovery plan developed for a Category 4b water or a TMDL describes the process and steps to restore an impaired waterbody to a condition that meets the water quality standards for the pollutants indicated.

Section 303(d) requires a list of impaired waterbodies that are not expected to meet standards without additional controls. Many Section 303(d) listed waters have not undergone comprehensive water quality assessments to determine the extent of water quality impairment or whether existing controls are adequate to achieve the standards. DEC closely scrutinizes waterbodies to determine whether suspected water quality violations or persistent exceedances of water quality standards have been thoroughly investigated and documented. Careful review by DEC is intended to prevent the listing of waterbodies with inconclusive or circumstantial data or solely on the basis of observation.

General Assessment Methods

DEC actively solicits all existing and readily available water quality data and information from local, state, or federal agencies; members of the public; or academic institutions and in accordance with EPA guidance. The information gathered is not limited to waters for which water quality problems; DEC also contacts these organizations have been reported

Comment [j13]: Assigning TMDLs into different categories based on their heath is not necessarily true—Categories 4 and 5 both include impaired waters, The waterbodies' health has not be determined for Category 3 waterbodies.

Comment [j14]: Does DEC really schedule Category 4 waterbodies? They are not listed on any schedule like those shown on Appendix C for Category 5 waters. If there is a schedule, may want to include it as an Appendix in this Integrated Report.

Comment [j15]: How is the public involved in determining how waterbodies will be addressed?

Comment [j16]: Provide a citation to the guidance.

by local, state, or federal agencies; members of the public; or academic institutions. These organizations and groups are contacted for research they may be conducting or reporting. University researchers, the United States Department of Agriculture, the National Oceanic and Atmospheric Administration, the United States Geological Survey, and the United States Fish and Wildlife Service are examples of organizations contacted by DEC such sources of fieldfor data, information and research.

DEC actively accepts and solicits water quality data and information on a continuous basis. Additionally, <u>DEC issues a formal public notice to seek this that such</u> information is sought is made every 2 years as part of developing the Integrated Report.

DEC considers and evaluates data and information from a wide range of sources, such as those listed below:

- Previous reports prepared to satisfy CWA Sections 305(b), 303(d), and 314 and any updates
- Reports of ambient water quality data, including those prepared as part of state
 ambient water quality monitoring programs, complaint investigations, information
 generated by the public and other sources that provide readily available data (e.g.,
 STORET, an EPA environmental database), and data and information provided in
 public comments
- Reports of dilution calculations or predictive models
- Water quality management plans
- Superfund (contaminated sites) Records of Decision for Superfund (contaminated) sites
- Safe Drinking Water Act source water assessments

In addition to these conventional sources of data, DEC also considers water quality data and information from citizen volunteer monitoring networks.

General Considerations for All Waterbody Categories

The following subsections describe data quality and quantity considerations addressed by DEC when DEC evaluatesing a water for inclusion on or removal from the Section 303(d) list of impaired waters (Category 5) or in making an attainment determination.

Data Quality Considerations

DEC considers whether typical elements of a quality assurance project plan (QAPP) are submitted for water quality data and information. A QAPP checklist for sampling, a quality assurance project plan review checklist, and a description of elements that characterize a good QAPP are available on the DECs web site at http://www.dec.state.ak.us/water/wqapp/wqapp index.htm.

Water quality data and information that is collected and submitted without a QAPP or that uses a QAPP for which the level of confidence is weak will not be relied on to make an

Comment [j17]: Wouldn't this be true for Category 4 and Category 3 too?

2. Categories, Assessment Methodology, and Results

impairment determination. Such data and information may only be considered as ancillary information to support an attainment or impairment determination.

Comment [j18]: Will these waters by added to Category 3?

Data Quantity Considerations

Adequate data quantity is necessary to make well-grounded attainment and impairment decisions. Assessments based on larger sample sets are preferred because they are more likely to yield accurate conclusions than assessments based on smaller sample sets.

Enough data or information should be available to indicate that standards are or are not exceeded, or that uses are or are not impaired, and that such measurements are representative of the waterbody.

Categories and Assessments

Category 1

Waterbodies are placed in this category if data are available to support a determination that all water quality standards are attained.

Criteria Used to Classify a Waterbody as Category 1

The majority of Alaska's waters <u>isare</u> not subject to man-caused stressors and are considered unimpaired. DEC expects that 99.9% of Alaska's waters can be classified as Category 1; however, no specific waters are identified in this category.

Category 2

Waterbodies are placed in this category if some of the water quality standards for the designated uses are attained.

Category 2 - Attaining Some Uses

Waterbodies are placed in Category 2 if data and information are available to support a determination that some, but not all, uses are attained and if the attainment status for the remaining uses is unknown because there is insufficient or no data or information. These waters are presumed to be attaining all uses. Monitoring should be scheduled for these waters to determine whether the uses previously found to be in attainment remain in attainment and to determine the attainment status of those uses for which data and information was previously insufficient to make a determination. The 44 waterbodies assigned to Category 2 are identified in Appendix A.

Criteria Used to Classify a Waterbody as Category 2

Waterbodies that have been previously identified as impaired but are now attaining a water quality standard are placed in this category. Examples are waters for which a TMDL or other pollution controls have been implemented or for which recent monitoring data support a determination that the water quality standard is attained.

Comment [j19]: Does DEC's data quantity considerations include any general guidance for all pollutants such as 2 years of data, a certain number of sampling events. Where are specifics on this topic located in this report or on DEC's website or in DEC guidance?

2. Categories, Assessment Methodology, and Results

Waterbodies associated with residue discharges are also placed in Category 2 if recent dive survey reports show that water quality standards are attained and have continued to be attained.

Waterbodies that were determined to be impaired from residues and listed as Category 5 but have a documented continuous coverage of residues of less than 1.0 acre are also placed in Category 2 and are identified in Appendix A.

Category 3

Waterbodies are placed in Category 3 if data or information are insufficient to determine whether the water quality standards are attained for any of the designated uses.

An additional 6 waterbodies have been identified for placement in Category 3 since the 2008 Integrated Report. The 303 Category 3 waterbodies are identified in Appendix A.

Criteria Used to Classify Waterbodies as Category 3

Alaska's water resources include more than 3 million lakes larger than 5 acres in size, 365,000 miles of rivers and streams, more than 175 million acres of fresh water wetlands, and 36,000 miles of coastal shoreline. Because of the size of its water resources, Alaska has insufficient, inadequate, or little to no data or information to support attainment or impairment determinations for many waterbodies. (DEC expects that the majority of these waters would be assigned to Category 1—waters attaining standards for all uses—if it had information available to assess them.)

Category 3 includes waters DEC formerly called "open files" and waters nominated for assessment through the ACWA process of Alaska's three resource agencies: DEC, Alaska Department of Fish and Game, and Alaska Department of Natural Resources. Actions that trigger opening a file can include nomination from the public, a public complaint, a newspaper report, or more rigorous information such as water quality reports or assessments. For many of these waters, definitive water quality data or information to determine whether water uses are being attained or impaired is lacking, scant, spotty, or outdated. Many of these waters have been brought to the attention of Alaska's state resource agencies for suspected pollution or for impairment of water quantity or fish habitat. DEC maintains files on some of these waterbodies, and the information is available upon request.

Some circumstances under which a water may be assigned to Category 3 are identified below:

- The data and information were collected using unacceptable quality assurance/quality control and could not provide an accurate assessment.
- The quantity of the existing and readily available data and information is inadequate to provide an accurate assessment.

Comment [j20]: Include the names and locations of the waterbodies.

• The existing and readily available data and information are not representative of current conditions of the waterbody. Examples of conditions that might have altered current conditions are (1) significant land use changes occurred in the watershed affecting the hydrology and nonpoint loadings, (2) point source discharges were removed or new discharges are now operating, (3) Alaska made significant changes in applicable data collection methodologies, or sampling station locations did not reflect the character of the waterbody segment.

The ACWA Process

Through the ACWA process, DEC, the Alaska Department of Natural Resources, and the Alaska Department of Fish and Game work together to focus state and federal resources on addressing issues of water quality, water quantity, and aquatic habitat for the waters with the greatest need. These cooperating agencies have developed a waterbody nomination and ranking process that relies on established criteria to identify priorities for assessment, stewardship, and corrective action needs. The process addresses waters affected by these and other problems: presence or risk of pollution, habitat degradation, and quantity problems. Several components of ACWA are interwoven and occur concurrently.

Determination About Future Actions

The identified waterbodies are evaluated to determine whether the waterbody is adequately protected, requires additional protection, or needs restoration or remedial action. The primary tool for this component is identification of database tracks.

The entire ACWA process (consisting of the integrated components) is conducted in three phases: nomination, analysis, and action. During the nomination phase, each waterbody nominated by the public, agencies, or both is reviewed. Information identifying the waterbody is entered into the ACWA database. The nominator may be asked for additional information.

The ACWA database uses four tracks to identify the nominated waterbodies: Data Collection and Monitoring, Adequately Protected Waterbodies, Waterbody Recovery, and Protect and Maintain Waterbodies at Risk. Identification of the applicable track is an ongoing process and is affected by evaluations, analysis, and ranking, as well as receipt of additional data and information; new knowledge or decisions may lead to placement of the waterbody in a different track. For example, during the analysis and action phases, the identification of additional data needs may result in the waterbody being reassigned to the Data Collection and Monitoring track.

Waterbodies for which data are not sufficient to suggest a current or anticipated problem are placed in the Data Collection and Monitoring track. The waterbodies for which sufficient and credible data are available and for which those data suggest existence of a current water quality, water quantity, or aquatic habitat problem exists or future problems are likely are subject to additional evaluation. Those further evaluations assess the

Comment [j21]: Include the explanation on the relationship between ACWA and Category 3 after this paragraph rather than at the end of this section. Otherwise it is confusing to the reader on why this information is included here.

Comment [j22]: Do the agencies review waterbodies nominated in earlier years to see if the track assigned should be changed?

effectiveness of agency stewardship and determine the persistence of standard exceedances or of regulation violations. Many of these waterbodies are entered in the Protect and Maintain Waterbodies at Risk or Waterbody Recovery database tracks.

The determination about future actions primarily considers whether the water is at risk, in need of recovery, or adequately protected. The determination is used by the agencies to determine actions needed for a particular water.

Waterbodies that are at risk and waterbodies needing recovery are addressed as follows during the action phase:

- Priorities for action on individual waterbodies are established.
- Protection or recovery actions are identified and implemented.
- The success of protection/recovery actions and directing the waterbody for additional information, continued monitoring, or additional protection/recovery actions is evaluated.

Finally, waterbodies that are determined to be adequately protected are placed on the adequately protected track.

Analysis of Data

During the analysis phase, a successfully nominated waterbody undergoes a series of determinations using established criteria to assess the adequacy and credibility of the associated data available for the waterbody. This step is called a "sufficient and credible data review." Tables used to assist in reviewing the rigor of the data and information associated with each water and to score each water are available at http://www.dec.state.ak.us/water/acwa/pdfs/su.pdf.

In scoring waters for sufficient and credible data, three topics are considered: Data Content, Data Coverage, and Data Quality. Parameters addressed under Data Content evaluate how sufficiently and completely the information contained in the nomination describes the nature and extent of the identified issue. Parameters addressed under Data Coverage and Data Quality evaluate the quality of the information provided and the rigor of the analysishow rigorous it is.

Data Content scoring considers the basis for the assessment of use attainment, the land use information available for the water, information on the expected reference condition, information on the source or sources of pollution, and the availability of photographs showing the condition of the water. The objective is to identify whether the available data are sufficient to identify the existence or extent of a current or potential problem.

Data Coverage scoring considers the number of locations and seasonal information available. Data Quality scoring considers adequacy of the quality assurance and quality control for the information, whether sampling protocols were documented, and how relevant and current the information is.

Comment [j23]: What is meant by "regulation violations"? Providing an example might help.

Nearly all of the Category 3 waters identified in this Integrated Report have gone through the sufficient and credible data step in the ACWA process. A small number of waters at any given time are placed in a "pending" status until the water quality information and data associated with the water undergo a sufficient and credible data review step.

Creation of the ACWA Priority Ranking

In addition to the analysis of data and overall determination of future actions for the watershed, the waterbodies are ranked to establish priorities. The waterbody ranking enables agencies to focus resources on the most important priorities. The agencies developed cCriteria and were developed to assign a numeric value that identifies relative priority to each successfully nominated waterbody, resulting in the ACWA Priority Ranking.

Six factors are used to score each of three components: water quantity, water quality, and aquatic habitat. The six factors are as follows:

- Allocation, or the extent to which the water has been obligated for various uses
- Condition
- Protection
- Future use
- Present use
- Value

Evaluation for each of the six factors results in relevant scoring for each component. The possible scores are high (5), medium (3), or lower (1). When

Staff from one of the three resource agencies review readily available information and data related to a given waterbody use their best professional judgment to assign a factor rating. The agency with statutory or regulatory authority over the water resource component is responsible for assessing that component. The following considerations guide the ranking decisions: (1) the statutory criteria, (2) severity of pollution, and (3) expected uses of the waters, according to CWA Section 303(d)(1)(A).

The Alaska Department of Natural Resources hydrologists provide factor ratings for water quantity; biologists in the Alaska Department of Fish and Game provide aquatic habitat factor ratings; and DEC provides water quality ratings. Appendix H provides ranking for each waterbody. More detailed information on the ranking process is available online at http://www.dec.state.ak.us/water/acwa/acwa_ranking.htm

Distinctions for the ACWA Process and Listing of Waters by Category

For the ACWA process and the categorization or listing of waters in the Integrated Report, two important points should be noted:

Comment [j24]: What is meant by this? Elaborate or define

Comment [j25]: How many staff from each agencies participate in this process? How often do the agencies meet to evaluate the waterbodies for ACWA priority ranking score?

- The process for the Integrated Report listing decisions is different from the process used for ACWA ranking and priorities. An impairment listing is considered in the ACWA process, however, and most waters that are listed as impaired under Categories 5 and 4 are ranked as high priority by the ACWA process. In other words, the Integrated Report plays a role in the ACWA prioritization process. ACWA does <u>not</u> drive the listing decision; it provides information management and helps with identifying and implementing actions that will remove impairments.
- One component of the ACWA process is an analysis of whether sufficient and credible information exists. This analysis is <u>only</u> used for ACWA prioritization for further action; it does not determine whether data are sufficient for a use in an attainment decision. The criteria used for attainment and listing decisions are discussed under the "Criteria Used to Classify a Waterbody as Category 5" section of this report.

Category 4

Category 4 waters have been determined to be impaired but do not need a TMDL. The three subcategories of Category 4 waters are discussed below.

Category 4a - TMDL Completed

<u>DEC assigned this category to An-impaired waters where that was previously listed in Category 5 but for which-DEC developed a TMDL has been completed and EPA approved the TMDL or by-EPA issued the TMDL is assigned to this category.</u>

For waterbodies that have been placed in this category, a TMDL addressing a specific impairment has been developed and approved by EPA. It is expected that implementation of that TMDL will result in, full attainment of the water quality standards applicable for that specific impairment. If the waterbody has another impairment, the waterbody may also be assigned to Category 5 until DEC develops a TMDL and EPA approves the TMDL or EPA issued the TMDL a TMDL has been developed and approved for that impairment.

Monitoring should be scheduled for Category 4a waters to verify that the water quality standards have been met after implementation of the water quality management actions needed to achieve one or more TMDLs.

The 32 waterbodies identified for placement in Category 4a are described in Appendix A.

Criteria Used to Classify a Waterbody as Category 4a

The key criterion for Category 4a is where DEC developed a TMDL and EPA approved the TMDL or EPA issued the TMDLa completed and approved TMDL.

Comment [j26]: TMDLs can be developed for unlisted but impaired waters and be placed directly in this Category 4a without ever being in Category 5.

Comment [j27]: Is this a usual practice for DEC? If DEC is scheduling monitoring for 4a waters, then include this information under the narrative for each waterbody.

Comment [j28]: I counted 31 waterbodies. I am wondering whether Jordan Creek was counted twice since there are 2 separate entries for this watebody. Update: ADEC revised the language to state that 32 TMDLs have been developed for 31 waterbodies which is incorrect. The number of waterbodies are correct but the number of TMDLs are far greater since ADEC can and does develop more than one TMDL in a waterbody.

Category 4b – Other Pollution Control Requirements Are Reasonably Expected to Result in Attainment of the Water Quality Standard in a Reasonable Period of Time

Consistent with Sections 130.7(b)(I), (ii), and (iii) of the *Code of Federal Regulations* (CFR), waters are placed in this category when other pollution control requirements required by a local, state, or federal authority are stringent enough to achieve any water quality standards applicable to such waters within a reasonable time period. These requirements should specifically apply to the particular water quality problem.

Monitoring should be scheduled for these waters to verify that the water quality standards will be attained as expected.

There are four waterbodies identified in Category 4b and are shown in Appendix A.

Criteria Used to Classify a Waterbody as Category 4b

Other pollution controls are required if the controls and assurances are sufficiently stringent that the waterbody is expected to meet standards in a reasonable time period. The following are examples of other pollution controls:

- An approved state or federal Record of Decision (ROD) associated with a state or federally approved cleanup action for a contaminated site
- An approved remediation plan for a permitted facility, such as a log transfer facility, reporting more than 1.5 acres of continuous residue coverage
- A National Pollutant Discharge Elimination System (NPDES) permit that incorporates TMDL-type controls for the permitted facility
- A water-quality based permit with controls or assurances that water quality goals will be met
- Restoration, remediation, or recovery measures or plans with controls and assurances
 that are sufficiently stringent to assure that water quality goals will be attained within a
 reasonable time period

Key factors that must be considered before placing a waterbody in Category 4b are as follows:

- The need for pollution controls or measures
- Whether requirements and controls are sufficiently stringent that standards can be expected to be met in a reasonable time period
- Assurances that the requirements and controls will be implemented in a reasonable time period

Placing a water in Category 4b requires EPA approval and the development of a Category 4b rationale that must address the following six elements:

1. Identification of impaired segment and statement of problem causing the impairment

Comment [j29]: If DEC is scheduling monitoring for 4b waters, then include this information under the narrative for each waterbody.

Comment [j30]: What about enforceability of the mechanism used to ensure implementation of the restoration plan?

- 2. Description of pollution controls and how they will achieve water quality standards
- 3. An estimate or projection of the time when water quality standards will be met;
- 4. Schedule of implementing pollution controls
- 5. Monitoring plan to track effectiveness of pollution controls
- 6. Commitment to revise pollution controls as necessary

Determining whether to place a waterbody in Category 4b requires the application of best professional judgment and agency enforcement discretion. This approach includes discussion and analysis of a variety of factors such as pollutant characteristics (for instance, consideration of the magnitude, frequency, and duration of the pollution event or events), pollutant sources, size of the waterbody, the stringency of the requirements or assurances, and the degree of recovery response required.

Waterbodies associated with residue discharges also are placed in Category 4b if the following conditions are met: (1) two or more dive survey reports from log transfer facilities document more than 1.5 acres of continuous residues coverage and (2) the waterbody is addressed in an approved remediation plan under the Log Transfer Facility General Permit or under an individual state wastewater discharge permit. (Information on remediation plans is provided in Appendix G.) Waterbodies that are under EPA compliance orders for seafood residue violations may also be considered for placement in Category 4b if compliance with the order ensures that the water will attain the water quality standard for the residues in a reasonable time period.

Category 4c - Impairment Is not Caused by a Pollutant

Waterbodies are placed in this category if the impairment is not caused by a pollutant affecting water quality. An example of an impairment with a cause other than water quality is degraded riparian habitat.

Category 4c waterbodies should be considered for monitoring to confirm no pollutantcaused impairment is present and to support water quality management actions necessary to address the cause or causes of the impairment.

No Category 4c waterbodies are currently identified; however, Alaska's resource agencies <u>may</u> use this category to track waterbodies with non-pollutant impairments in the future.

Criteria Used to Classify a Waterbody as Category 4c

Alaska has not adopted specific criteria or standards to identify any impairments not related to water quality. ACWA priority rankings identify aquatic habitat or water quantity waters for action, but these waters are not referred to as "impaired" because they are not impaired in terms of water quality.

Category 5 - Impaired Waterbodies on the Section 303(d) List

Waterbodies are placed in Category 5 if one or more water quality standards (in 18 AAC 70) are not attained. Because the presence of one or more pollutants results in the failure to attain one or more water quality standards, the waterbody is impaired for at least one designated use and a TMDL-or waterbody recovery plan to attain applicable water quality standards is required.

The 27 waterbodies identified for placement in Category 5 and on the Section 303(d) list are described in Appendix A.

Criteria Used to Classify a Waterbody as Category 5

For Alaska's listing methodology for determining impairments from turbidity, pathogens, and residues see Appendix I.

Waterbodies in Category 5 constitute the CWA Section 303(d) list of waters impaired by a one or more pollutants and for which applicable TMDLs are needed. A waterbody is listed in this category if application of Alaska's assessment and listing methodology finds that a pollutant has caused impairment. According to CWA Section 303(d) and EPA's implementing regulations, Section 303(d)-designated waters include impaired surface waters that do not or are not anticipated to meet applicable water quality standards solely through the implementation of existing technology-based or similar controls. In Alaska, these waterbodies are priority-ranked based on the severity of the pollution, the feasibility of implementing a waterbody recovery plan, and other factors. The development of a TMDL or equivalent waterbody recovery plan for these waterbodies is scheduled 8 to 13 years into the future from the time they are first placed on the Section 303(d) list (see Appendix C: TMDL Schedule and Factors).

Impaired waterbodies are surface waters with documentation of actual or imminent persistent exceedances of water quality criteria, adverse impacts to designated uses, or both, as defined in Alaska water quality standards. Designation of a waterbody as "impaired" does not necessarily indicate that the entire waterbody is affected. In most cases, only a segment of the waterbody is affected. When possible, the assessment process identifies the specific segment that is impaired and the corresponding pollutant parameters of concern.

The term "persistent" is key to determining whether a surface waterbody is impaired. Determining persistent exceedances of water quality standards is a waterbody-specific decision that requires the application of best professional judgment. This approach includes discussion and analysis of a variety of factors such as pollutant characteristics (for instance, consideration of the magnitude, frequency, and duration of the pollution event or events); pollutant sources; size of the waterbody; and the degree of remediation response required.

DEC makes impairment determinations based on credible data. The term "credible data" means scientifically valid chemical, physical, or biological monitoring data collected under a scientifically accepted sampling and analysis plan, including quality control and quality

Comment [j31]: Would be helpful to reference the location of this information. See Appendix C: TMDL Schedule and Factors..

Comment [j32]: Can you provide any generalizations or examples of how DEC makes "persistent" determinations?

2. Categories, Assessment Methodology, and Results

assurance procedures that are consistent with Alaska water quality standards (18 AAC 70). Water quality data and information that is less than 5 years old is preferred. In certain instances, data and information more than 5 years old may be considered in an impairment determination. For those instances, the data and information is carefully scrutinized and reviewed before it is validated as credible.

Impairment determinations must be substantiated with empirical water quality chemistry unless the water quality criterion is a narrative qualitative standard such as the absence of a visible sheen or presence of sludge.

DEC uses the following guidelines to determine whether a waterbody is impaired:

- Water quality monitoring data that documents persistent exceedances of a criterion or criteria established in Alaska's water quality standards.
- Issuance of a notice of violation or other enforcement action definitively linked to a
 persistent water quality violation (of 18 AAC 70) that does not result in adequate
 corrective measures.
- Photographs or videos with appropriate documentation definitively linked to persistent
 exceedances of water quality standards (Photographic or videographic documentation is
 supportive of water quality data unless such documentation is supportive of a narrative
 water quality criterion such as for residues.)
- Documented persistent presence of residues (floating solids, debris, sludge, deposits, foam, scum) on or in the water, on the bottom, or on adjoining shorelines.
- Documentation or water quality data, such as a report or study within the last 5 years, that demonstrates designated uses are adversely affected by the.pollutant-eondition data or documentation that is more than 5 years old. Data or documentation older than five years old is only considered if it is determined to reflect the current condition of the waterbody.
- Developed listing methodology.
- Documentation from a resource agency or other credible source that applies the use of best professional judgment to provide credible data. Best professional judgment is used to determine whether a waterbody persistently exceeds water quality standards or has designated uses that are adversely affected by pollutant sources.

Best professional judgment determinations should be made by more than one professional and at the agency level; must be made by a professional knowledgeable in the relevant field of expertise and generally be based on that person's experience and all the information reasonably available at the time; should be based on the best available scientific data and information; and must be subject to management level review.

Best professional judgment recommendations from outside DEC must be affirmed by DEC staff with the appropriate scientific expertise; , and available data and basis for the decision should be documented.

Comment [j33]: Within what time period?

Comment [j34]: I don't understand this statement. Please clarify or delete.

Comment [j35]: Do you mean compliance with the listing methodology? Please elaborate or explain

Comment [j36]: Why must these determinations be subject to management level review?

Alaska's process for listing an individual waterbody under Section 303(d) begins with an internal review of existing and new information for ACWA-nominated waters or former "open files." Waters may be brought to the attention of DEC by its staff, other state and federal agencies, municipalities, Native organizations and tribes, industry, and the concerned public. In the development of the Integrated Report, DEC solicits public participation in providing existing and readily available water quality data and information.

DEC staff initially evaluate available information about a waterbody to determine the presence of pollutants and/or persistent exceedances of water quality standards or impacts to the designated uses and the degree to which water quality standards are attained. This process constitutes a DEC desk audit and may involve a preliminary field review and the collection of water quality monitoring data. The possible findings and the subsequent actions are described below:

- Credible data and information indicates that the waterbody may be impaired and that existing controls may be inadequate to attain or maintain standards in a reasonable time period. The waterbody is placed on the Category 5 list. As needed, these Section 303(d) listed waterbodies are scheduled for comprehensive water quality assessments.
- Credible data and information indicates that the waterbody may be impaired and that existing controls are adequate to attain or maintain standards in a reasonable time period. If a water undergoes the process associated with a Category 4b assignment and meets those requirements, the waterbody may be placed in Category 4b. Category 4b waters are tracked and monitored until standards are achieved.
- Credible data and information on a waterbody indicates the waterbody is not impaired. The waterbody is placed in Category 1 or 2. Category 1 and 2 waters typically require no further action but may be reconsidered at any time if new water quality data or information become available that show WQS are no longer being met.

Not all Section 303(d)-designated waters have undergone comprehensive water quality assessments to determine either the extent of water quality impairment or whether existing controls are adequate to achieve the standards. DEC closely scrutinizes waterbodies to determine if suspected water quality violations were thoroughly investigated and documented. This approach is designed to prevent the listing of waterbodies with inconclusive or circumstantial data or solely on observations.

A completed water quality assessment of a Category 5 waterbody confirms the extent of impairment to water quality, designated uses, or both. A comprehensive assessment requires the identification of the pollution source and pollutant causing the impairment and should result in one of the following: The subsequent actions that follow specific findings of the assessment are described below:

Comment [j37]: As an initial step in TMDL development, DEC often will conduct a comprehensive assessment. This is especially true for waterbodies listed in the 1990's where waterbodies were put on the List with little information....

- The assessment indicates the waterbody is impaired and that existing controls are inadequate to achieve water quality standards in a reasonable time period. Category 5 Section waterbodies require a TMDL-or equivalent waterbody recovery plan.
- The assessment indicates the waterbody is impaired but confirms existing controls are adequate to achieve standards in a reasonable time period. The waterbody is placed on the Category 4b list.
- The assessment indicates that the waterbody is not impaired. The waterbody is placed in Category 1 or 2.

Section 303(d) listed waterbodies are currently scheduled for TMDL development <u>from</u> 2010 through or waterbody recovery plan, now and out to year 2014. The TMDL schedule and the criteria for developing the schedule are provided in Appendix C.

Removal of Waterbodies from the Category 5 List

After a waterbody has been placed on the Category 5 list (list), several conditions can lead to removal of the waterbody from the list. All determinations to remove waterbodies from the Category 5-list are subject to approval by EPA. Examples of One or more of the following conditions can supporting the removal of a delisting of a waterbody from Category 5 are described below:

- More recent and accurate data show the applicable water quality standard <u>for all impairments or standards on the list</u> are being met.
- More sophisticated water quality modeling demonstrates that the applicable water quality standard or standards are met.
- Flaws in the original analysis of data and information led to the water being incorrectly listed.
- Revised listing criteria negate the criteria for listing.
- The water quality standard for which the waterbody was listed has been revised and the water does not meet the <u>revised water quality</u> criteria for listing.
- Sufficiently stringent requirements have been applied. Examples are incorporation of TMDL type controls into the NPDES permit or controls such as those applied by a cleanup or remediation plan with assurance that the water quality standard or standards will be met within a reasonable time period.

Comment [j38]: What is meant by "listing criteria"? Revised listing methodology? Revised EPA guidance? Can you elaborate or define?

Comment [j39]: This bullet repeats the bullet following the TMDL one.

2. Categories, Assessment Methodology, and Results

- DEC developed and EPA approved aA TMDL or EPA issued a TMDL. or equivalent waterbody plan has been developed. (If a TMDL is developed, the water is placed in Category 4a; if an equivalent waterbody recovery plan is developed, the water is placed in Category 4b.
- Other pollution controls that ensure water quality standards are attained are developed <u>within</u> a reasonable time period (<u>see as described for Category 4b</u> requirements described on pages 15-17 <u>waterbodies</u>).
- Other relevant information supports the decision that the water should not be included on the Category 5 list.

<u>Documentation</u> In addition, all of the following conditions are required to support a determination to remove a water from the Category 5 list <u>are described below</u>:

- "Good cause"—an explanation of why or on what basis the water was originally listed and why it is now appropriate to remove the listed water or redefine the listed area; —has been demonstrated.
- An administrative record and documentation supporting the recommended determination; and is needed.
- A <u>published</u> public notice of the proposed de-listing <u>that includes a 30 day comment periodis published and public comment is sought. (-Typically the Integrated Report acts as the vehicle for providing public notice and soliciting comments. In special instances, a public meeting could be held in the community closest to the waterbody in question).</u>
- When considering a determination to remove a waterbody from the Category 5 list, the level of data to support a determination and burden of proof is not required to be greater than was used in the initial listing determination.

Comment [j40]: You explain 4b in other bullets.

Comment [j41]: Like what? Since this is not a comprehensive list, you may want to delete this bullet

Comment [j42]: Is this statement true? This information differs from the type of information provided in the other bullets so if this statement is true, then you may want to include this statement in a separate paragraph following the bullets.

A. Waterbody Categories 2 through 5

A. Waterbody Categories 2 through 5

Category 2 Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained Lake, Nearshore Beaufort Lagoons or Red Fox

Previous Prev *Impairing* Impai AK ID Water Quality Area of **Pollutant** Region Category Number Waterbody Location Standard Sources Concern **Parameters** IN 40510-Caribou Turbidity Turbidity Category Denali 16.1 Mining 005 National miles Creek

Park

approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Creek, you provide a very detailed narrative. Highly recommend using active voice-since in numerous cases it is difficult for the reader to determine who Pollu conducted the actions.

Comment [j43]: May want to use a consistent

DEC included Caribou Creek was included on the 1994 Section 303(d) list for turbidity from past mining activity within Denali National Park and Preserve. The waterbody lost its sinuosity along segments of the watershed. Currently there is no active mining on Caribou Creek and current National Park Service (NPS) policy will not permit future placer mining. A site visit with NPS, EPA, and DEC was conducted a site visit in 2009 to review the progress of previous reclamation efforts and to assess any areas requiring additional reclamation activities. NPS established seven cross sections for floodplain design purposes along with before and after topographic monitoring. Channel locations and sinuosity were GPS surveyed, and water discharge measurements were taken. DEC concluded Comment [j44]: Use active voice. Who aAnalysis and evaluation of site and data concluded that Cariboue Cereek is meeting the turbidity standard although further work we conducted these actions? be beneficial. NPS prepared As such, a draft recovery plan has been prepared to reconstruct the floodplain, rebuild the channel(s), ar Comment [j45]: Beneficial for what?

provide for more natural overbank flooding and deposition. The re-construction will be followed up with a revegetation effort. If funding

becomes available, work will is to begin in 2010.

IN	Category	40506-	Chena River	Fairbanks	15 miles	Petroleum	Petroleum	Urban
	2	007				Hydrocarbons,	Products	Runoff
						Oil & Grease		

DEC included Chena River was in the 1990 Section 303(d) listed in 1990 for turbidity, petroleum hydrocarbons, oil and grease, and sediment. The identified pollutant source is urban run-off. DEC conducted sampling in 2005, 2007 and 2009 for hydrocarbons and sediment. Data have shown that the Chena River met water quality standards for the petroleum hydrocarbon standard. DEC moved this waterbody for petroleum product impairment from Category 5 to this Category in the 2010 Integrated List. Data are currently being reviewed for the sediment standard.

IN	Category	40506-	Chena	Fairbanks	13 miles	Petroleum	Petroleum	Urban
	2	002	Slough			Hydrocarbons,	Products	Runoff
						Oil & Grease		

DEC included Chena Slough This waterbodin the 1994y was Section 303(d) listed in 1994 for non-attainment of the petroleum hydrocarbons, oil and grease and sediment standards. Information presented in the 1994 Statewide Water Quality Assessment survey indicated that a petroleum problem existed and is-affecteding water quality. File assessment information indicateds nonpoint source problems resulted from the surface water run-off, road construction, site clearing, and de-watering activities from gravel operations. Based

on best professional judgment, of DEC staff this water was listed for petroleum products. DEC conducted water quality testing in 2 (Comment [j46]: Consider deleting this 2007, and 2009. Data have shown that the Chena Slough met water quality standards for the petroleum hydrocarbon standard. DEC information as it is later contradicted by information moved this waterbody for petroleum product impairment from Category 5 to this Category in the 2010 Integrated List. Data are curre provided at the end of the paragraph.

being reviewed for the sediment standard. Fecal Coliform Harding N/A Fecal Coliform 40505-Fairbanks Urban IN Category 2 401 Lake **Bacteria** Bacteria Runoff

A. Waterbody Categories 2 through 5

Category 2 Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained

Previous *Impairing* AK ID Area of Water Quality **Pollutant** Region Category Number Waterbody Location Standard Parameters Concern Sources DEC placed Harding Lake was placed on the 1998 Section 303(d) list and was de listed on February 13, 2004. Harding Lake first

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous Impal cases it is difficult for the reader to determine who Pollu conducted the actions.

Formatted Table appeared on Alaska's Section 303(d) list in 1994. In compiling the 1994 list, DEC reviewed data was reviewed from studies conducted in 1974, 1986, 1987, 1988, and 1994. Virtually all data showed Harding Lake was consistently meeting the fecal coliform bacteria WQS during each of these sampling efforts. However, one sample collected in 1986 showed a high level of fecal coliform bacteria (>60 colonies/100 ml). Although the geometric mean of 29 samples taken during the 1986 study was meeting WQS (15.7 colonies/100 ml), a graduate student study of Harding Lake suggested the lake may not be meeting the standard due to extensive recreational use. Due to this concern, the DECepartment decided that "based on the limited sample results and high population density using on-site wastewater disposal systems, it is likely that additional monitoring will show the waterbody to be water quality limited for fecal coliform bacteria." Harding Lake continued to be listed in 1996 and 1998 listings because no more information was available. DEC conducted additional monitoring and data analysis in 1999, Data collected in FY 1999, 2000, and 2001 and results through an approved QA plan showed 83% non-detects and no exceedances of Alaska's WQS WQS 18 AAC 70) for fecal coliform bacteria of €20FC/100ml. These results were th samples collected in 1987, 1988, and 1994 that also showed Harding Lake attaining water quality standards. A Sampling Alaska Department of Natural Resources' Division of Land, Mining and Water (DOLMW) and DEC, and p 2C, shows this information. In summary, the initial listing relied on one sample event and a concern that increased recreational ise of the lake was causing suspected additional fecal coliform bacteria inputs to the lake. In reviewing the initial listing, it is one high sample result was an inconsistent outlier and should not have led to listing Harding Lake as impaired. Later sampling showed water quality standards are being achieved and the recreational use of the lake is not causing violations as initially he new level of information showing Harding Lake should be de listed is a much stronger body of evidence than that used for suspected. listing determination. Based on these findings, DEC moved this waterbody from Category 5 to this Category in the 2002 Integrated List. Based on the findings Harding Lake was removed from Alaska's Section 303(d) list of impaired waters in the 2002/2003 Report.

IN	Category	60402-	Nearshore	Sag River	N/A	Temperature,	Temperature,	Causeway
	2	601	Beaufort	to Simpson		Dissolved	Salinity	
			Lagoons	Lagoon		Inorganic		
						Substances		

DEC placed Nearshore Beaufort Lagoons was placed on the 1996 Section 303(d) list for temperature and salinity. In 1998 the waterbody and moved to Tier III for tracking and monitoring. Various study reports and information from the EPA Alaska Operations Office indicated that the causeways impacted Nearshore Beaufort Sea'sthe hydrology and water quality (temperature and salinity), resulting in adverse effects on anadromous fish, of the Nearshore Beaufort Sea was affected by the causeways and was suspected to have cts to anadromous fish in 1996. Mitigation to correct problems with water quality and fish passage agreed upon in the Negotiated Settlement Agreement for Endicott and West Dock Causeways between the U.S. Army Corps of Engineers (Corps) and the permit holders (Public Notice 91-1) described a mitigation plan to correct problems with water quality and fish passage. This mitigation, described more specifically in permit modification FF 820562 consisted of additional breaching at both West Dock and Endicott causeways. The Corps completed the bBreaching construction during was finished in Fall 1995. The North Slope Borough requires water quality monitoring of the waterbody as a condition to conduct oil and gas operations adjacent and within the waterbody. Nearshore Beaufort Lagoon monitoring for temperature and salinity is performed on an annual basis during the ice-free periods as required by the North Slope Borough. A draft report titled "Hydrographic Monitoring of New Beaches in West Dock and Endicott Causeways" (Fechhelm, Robert, 1998) provides encouraging post monitoring results covering two years. The findings suggest stability or improvement to salinity and temperature conditions surrounding the causeways as a result of the expanded breaching. Data and information transmitted to DEC and EPA in 2002 supports that this waterbody is attaining the temperature and dissolved inorganic

substances water quality standards. Post-causeway monitoring studies have demonstrated that there is no biological impact-and that water quality is within state standards. Based on this information, DEC moved this waterbody from Category 5 to this Category in the 2002 st. the waterbody was placed in Category 2 in 2003. Integrated I

Comment [j47]: Who submitted this data and

A. Waterbody Categories 2 through 5

Category 2 Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained

Previous **Impairing** AK ID Water Quality Area of **Pollutant** Waterbody Region Category Number Location Standard Parameters Sources Concern SC 30102-Unalaska N/A Residues Settleable Category Captain's Seafood 2 605 Bay Island Solids **Processing**

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice-since in numerous Impal cases it is difficult for the reader to determine who Pollu conducted the actions.

Captain's Bay This waterbody was placed on the 1994 Section 303(d) list for settleable solids. Data used for the 1994 if Comment [j48]: Check to confirm that this at the discharger exceeded established zone of deposit contained in its NPDES permitfor the discharger was being exceeded method was on the 1994 list. I don't have that the discharger and evaluated by the DEC has resulted in the concluded sion that the discharger list; however I did not see this waterbody on the 1998 Section 303(d) list in 1908. indicated that the discharger exceeded established zone of deposit contained in its NPDES permitfor the discharger was being exceed DEC evalua meeting zone of deposit requirements. This waterbody was removed from the 1998 Section 303(d) list in 1998.

Comment [j49]: From what organization did Urb DEC obtain this data SC Category 20401-Cheney Anchorage N/A Fecal Coliform **Fecal Coliform** Lake Bacteria Bacteria Run Comment [j50]: Who is the discharger? Storm Drainage

DEC placed Cheney Lake was placed on the 1994 Section 303(d) list for non-attainment of the fecal coliform bacteria standard. Municipality of Anchorage's wWater quality data collected by the Municipality of Anchorage from 1991-1994 indicated that the fecal coliform bacteria eriterion was exceeded the water quality criteria in during nearly almost every month of monitoring. During However, in 2006 DEC conducted extensive water quality monitoring in Cheney Lake and found that . The 2006 data shows fecal coliform bacteria levels met slate water quality standards as a result actions by the municipality and the vast majority of the time and when levels exceeded state standards DEC believes the higher levels are from natural conditions. Cheney Lake is currently meeting SWQS for two reasons: 1) 's (and US Fish & Wildlife Service. These agencies conducted a) campaign to reduce the goose populations in (Anchorage experienced an (due to increased number of geese/aircraft problems incidences including a mMilitary air crash with numerous fatalities as a result of the blamed on waterfowl) and, and 2) a successful public awareness campaign educating pet owners on the benefits and owner's responsibilities of picking up after their pets, i.e., "Scoop the Poop" campaign. As a result of this monitoring Cheney Lake was removed from the 2008 Section 303(d) list-and placed in Category 2 in 2008.

\mathbf{SC}	Category	20505-	Cottonwood	Wasilla	Entire	Residues	Foam & Debris	Urban
	2	001	Creek		13 miles			Runoff,
								Urban
								Development

DEC placed Cottonwood Creek (13 miles) was on the 2002 Section 303(d) listed for non-attainment of the residues standard for foam and 12/2003. -DEC received numerous complaints about foam in Cottonwood Creek. DEC observed and foam was debris in 20 iring n-1998, 2000, 2001 and 2002; the problem was recurring, with no existing controls to address it. DEC conducted a. An intensive water quality evaluation was conducted on Cottonwood Creek during and commenced in September 2004 and 2005 and at - Water quality sampling conducted in 2004 - 2005 indicated that the foam present in Cottonwood Creek is most likely concluded t

naturally occurring. However, hydrologic changes within the watershed may be influencing the amount and timing of the toam. The Comment [j51]: Recommend deleting discussion rther investigated and water sampling conducted in 2006 also examined temperature and fecal coliform bacteria. Foam 📢 on other potential pollutants in this narrative o be naturally occurring and meeting water quality standards. Foam was determined to be influenced by natural determined

cal coliform bacteria exceeded water quality standards and the source(s) unknown. conditions;

A. Waterbody Categories 2 through 5

Category 2 Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attain Lake, Nearshore Beaufort Lagoons or Red Fox

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous cases it is difficult for the reader to determine who conducted the actions.

<u>Region</u>	<u>Category</u>	AK ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	<u>Water Quality</u> <u>Standard</u>	<u>Previous</u> <u>Impairing</u> <u>Pollutant</u> <u>Parameters</u>	Prev recommer cases it is Pollu conducted Sources
SC	Category 2	30401- 601	Dutch Harbor	Unalaska Island	0.5 acre	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Industrial, Urban Runoff

DEC placed Dutch Harbor on the 1994 was Section 303(d) listed in 1994 for non-attainment of the petroleum hydrocarbons, oil & grease standard_for petroleum products based on —aAn EPA study in August 1994, Water Quality Assessment for Greater Unalaska Bay (August 1994); cone luding eoneludedthat+ petroleum products he waterbody was adversely impacted this waterbody by petroleum products. A TMDL assessment conducted between began in 2006 and 2008 with completing an existing data compilation and identified and ying and prioritizeding potential risk sources. This study —showed that this waterbody met the standards within the water column and exceeded the standard for surface sheening. As a result of this study, DEC reduced the areas of impairment: Rigorous field sampling events were conducted in April 2007, September 2007 and September 2008 and included water column and sediment samples for BTEX, PAH & TOC. Results indicate the water column meets standards but several sediment results had surface sheening in exceedance of the standard. The original area of impairment has been reduced as a result of the field sampling and includes—two near-shore impaired areas and some areas of the harbor found to meeting water quality standards. DEC scheduled The TMDL completion for the remaining impaired areas is scheduled for completion by June 30, 2010. Implementation will focus on_docks and harbor best management practices to minimize any new petroleum hydrocarbon inputs to the area.

SC	Category 2	20302- 601	Eagle River Flats (60	Fort Richardson	N/A	Toxic & Other Deleterious	White Phosphorus,	Military Base
			acres)			Organic and Inorganic	Munitions Residues	Operations
						Substances		

A. Waterbody Categories 2 through 5

Category 2 Waterbodies Comment [j43]: May want to use a consistent approach to the type and amount of information Alaska's 2010 provided in each narrative. In some cases, such as Integrated Water Quality Monitoring and Assessment Report Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly Previous Prev recommend using active voice-since in numerous **Impairing** Impal cases it is difficult for the reader to determine who AK ID Area of Water Quality **Pollutant** Pollu conducted the actions. Region Category Number Waterbody Location Standard Concern Parameters Sources DEC place Eagle River Flats This waterbody was placed on the 1996 Section 303(d) list for white phosphorus and munitions residues. An EPA consultant, CH2M Hill prepared a report, Eagle River Flats - Comprehensive Evaluation Report (-July 1994). This report is a Comment [j52]: I believe it is a standard practice detailed environmental assessment that qualifies as a waterbody assessment. The report presents water quality data and other information specific consultants but to name the on the relationship between white phosphorous (from artillery shell residue) and its lethal effect on waterfowl in the Eagle River Flat agency for which the report was prepared. area. As a result of a the A Record of Decision (ROD) was signed on September 30, 1998, DEC placed so this water was placed in Comment [j53]: Who signed this ROD? Use Category 4b. The ROD identified aApproximately sixty (60) acres were identified as contaminated and requiring treatment. The Arr active voice conducted r Remediation activities occurred during in 1998-2001. During each field season, the Army placed six pumping systems Comment [j54]: Who signed this ROD? Use placed into the contaminated ponds and operated to drain the water from the ponds. Draining the ponds allowed the sediments to dry active voice and caused the white phosphorus to oxidize and no longer be a threat to the waterfowl. Field activities resulted in a dramatic decrease in white phosphorus concentrations in over half the total acreage identified as contaminated. By 2004, the Army addressed over 75 percent of the contaminated areas and d-were addressed, uring 2005, the Army treated tThe remaining area-was treated in 2005, and was the last year tment. The Army is now in the long term monitoring phase to ensure that the remedial action will meet the long term goal of ality to levels identified in the Record of Decision. During 2007, the Army conducted aAdditional pumping of water from the ponds and drying of white phosphorus contaminated sediments occurred in 2007. DEC concluded siders the Army to have Comment [j55]: I recommend deleting is in the ROD and <u>waterfowl</u> mortality is considered to be at levels typical for the species in this area <u>and</u> . This water w information on long term monitoring and meeting ROD commitments as it appears contradictory to the removed from Category 4b in the 2008 Integrated Report. reader that long term monitoring is designed to meet ROD commitment on waterfowl mortality levels and Category 30204-Eskimo King Petroleum Petroleum Land DEC concluded that commitment had already been Fu met. 023 Hydrocarbons. Products, Diesel 2 Creek Salmon Oil & Grease Range Organics Storage, Toxic & Other (DRO) Triformer chloroethene USTs. Deleterious Organic and (TCE) former Dry Inorganic Wells Substances (injection wells), Military DEC placed Eskimo Creek was initially placed on the 1996 Section 303(d) list based on information provided by the EPA's Comprehensive Environmental Response Compensation Liability Act (CERCLA) showing that s-or "Superfund" group. Seeps from a fuel former dry wells, and a dump adjacent to Eskimo Creek may be causing led to potential exceedances of stream water contamination by metals, pesticides, and petroleum standards hydrocarbons and the waterbody was listed for these parameters in 1996 DEC removed Later information suggested removing metals and pesticides from the list as a pollutant parameter since no analytical Comment [j56]: Which list? show exceed ance of standards from these parameters support these constituents as contaminants of concern, and placement of this se reek in Category 2. The primary sources of petroleum hydrocarbons and trichloroethene (TCE) from aboveground store Comment [j57]: Which branch? Army? wells have been removed. DEC and Air Force signed a final ROD for Groundwater Zone 1 was signed by DEC and Comment [j58]: When did this removal occur? Force-in November/December 2000 and . A final ROD for Groundwater Zone 2, and a Zone 2 during 2002-2003 Addendum v by DEC in December 2002 and 2003, and by the Air Force in December 2003. AFuture activities described in based on the RODs include: removal of extruding surface drums and debris, and recontouring and revegetation of the landfill cover; continued operation, maintenance, and monitoring of the biovent systems; monitored natural attenuation of the groundwater; groundwater modeling; continued operation of the water treatment system; annual monitoring of groundwater (A-Aquifer and B-Aquifer) and surface water; implement and maintain institutional controls; and 5-year reviews. The Air Force removed aboveground storage tanks and dry wells, which were the primary Comment [j59]: Which branch? Army? sources of petroleum hydrocarbons and trichloroethene (TCE). petroleum hydrocarbons and TCE and DRO attained water quality Comment [j60]: When did this removal occur? standards and DEC placed the waterbody was placed in Category 2-since water quality standards are attained for petroleum s and TCE and DRO in 2002 Integrated Report/2003. hydrocarbo

A. Waterbody Categories 2 through 5

Category 2 Waterbodies Comment [j43]: May want to use a consistent approach to the type and amount of information Alaska's 2010 provided in each narrative. In some cases, such as Integrated Water Quality Monitoring and Assessment Report Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly Previous Prev recommend using active voice-since in numerous **Impairing** Impal cases it is difficult for the reader to determine who Water Quality AK ID Area of **Pollutant** Pollu conducted the actions. Region Category Number Waterbody Location Standard Parameters Concern Sources SC 20401-Hood/Spenard Fecal Coliform Fecal Coliform Category 2 Anchorage N/A Urhan 412 Lake **Bacteria** Bacteria Runoff, Industrial Hood/Spenard Lake Section on the 1996 303(d) listed in 1996 for fecal coliform bacteria. DEC developed and EPA approved DEC placed in Category 4a because a TMDL for fecal coliform bacteria was developed and finalized on September 30, 1997 and DEC removed thi waterbody from the 1998 list for fecal coliform bacteria. This waterbody-remains on the Category 5 Section 303(d) list for low dissolved oxygen. DEC's review of water quality data shows that the water bodys is are meeting the fecal coliform bacteria standard and moved this waterbody to Category 2 in the 2010 Integrated Report SC Category 2 30102-Iliuliuk Bay Unalaska Petroleum Petroleum Urban Hydrocarbons. **Products** 602 Island Runoff Oil & Grease Iliuliuk Bay on the 1990was Section 303(d) listed in 1990 for non-attainment of the petroleum hydrocarbons, oil & grease DEC placed petroleum products.__An EPA study, in August 1994, Water Quality Assessment for Greater Unalaska Bay; (August 1994), standard for concluded p etroleum products adversely impacted the waterbody-was impacted by petroleum products. Between 2006-2007, DEC TMDL assessment that included began in 2006 review of with completing an existing data, ecompilation and identifying and conducted a potential risk sources and conducting - Rigorous field sampling event prioritizing nples for BTEX, PAH & TOC. -. All sample results for the Bay indicate the water and sediments are meeting standards for petroleum products and hydrocarbons. DEC is removeding Iliuliuk Bay from the 2010 Category 5/Section 303(d) listsed on this data in 2010. SCCategory 2 20402-Jewel Lake N/A **Fecal Coliform** Fecal Coliform Anchorage Urban Bacteria Bacteria Runoff, Land Development DEC placed Jewel Lake on the 1994was Section 303(d) list in 1994 for fecal coliform bacteria. EPA issued aA TMDL was de finalized on September 30, 1997 and DEC removed - Jewel Lake was removed from the 1998 Section 303(d) list in 1998. Monitoring results from July through October 2008 and May and June 2009 indicate the water is meeting state water quality standards for fecal coliform bacteria. As a result, DEC and moved Jewel Lake to Category 2 in the 2010 Integrated Report. Jewel Lake Comment [j61]: Is Jewel Lake truly impaired for 303(d) liste for dissolved gas (low dissolved oxygen). low DO? It is not listed in Category 5 so I suspect Log tra this this is an error. N/A SC 20701-**Kazakof Bay** Afognak Category faci Comment [j62]: Is this an 502 Island DEC placed this waterbody was placed on the 1998 Section 303(d) list for non-attainment of the residues standard for bark and woody debris. Dive survey information for this log transfer facility (known as Kazakof Bay 1) document an exceedance of the interim intertidal threshold bark accumulation level (as per Log Transfer Facility Siting, Construction, Operation and Wormson Space State of the date of the

From from the 2004 Category 5 (Section 303(d) list). and placed in Category 2 in 2004.

A. Waterbody Categories 2 through 5

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as

Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding

Lake, Nearshore Beaufort Lagoons or Red Fox

Category 2 Waterbodies

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Prev Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous cases it is difficult for the reader to determine who Previous **Impairing** AK ID Water Quality Area of **Pollutant** Pollu conducted the actions. Waterbody Location Region Category Number Concern **Standard** Parameters Sources SC 20302-Kenai River Kenai Slikok Petroleum **Total Aromatic** Motorized Category 005 (lower) Creek Hydrocarbons Hydrocarbons Watercraft (river (TAH) mile 19.0) to

DEC placed The Kenai River on the 2006 was Section 303(d) listed in 2006 for petroleum hydrocarbons [total aromatic hydrocarbons (TAH)].

the mouth (RM 0.0)

ning in 2000 and through 2007, DEC received water quality data that showed exceedances of the State of Alaska petroleum Between gi water quality standard for TAH during the month of July. During 2003, DEC conducted A-water quality study that conducted b VDEC in 2003 confirmed motorboats as the source of the petroleum hydrocarbon pollution was from motorboats. Sampling d no petroleum was detected in the river in May, low levels in June, exceedances in July, low levels in August, and no also indicat on in September. In 2008, Departments of Fish and Game and Natural Resources issued regulations that ory actions taken by contaminat Resources, requireding all outboard engines operating on the Kenai River during the month of July to be either 4-stroke or direct fuel injection 2-stroke motors. As a result, DEC moved, allowed the Kenai River to be moved to Category 4b in the 2008 Integrated Report. DEC conducted in Intensive water quality monitoring during conducted in July 2008 and 2009 and results showed that confirmed the actions taken resulted in the Kenai River was attaining waterbody standards. Therefore, DEC moved: the Kenai River was moved to Category 2 in the 2010 Integrated Report. DEC will continue periodic monitoring to ensure water quality standards continue to beare being met.

A. Waterbody Categories 2 through 5

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								zane,
							Previous	Prev Creek
							Impairing	Impai recom
		AK ID			Area of	Water Quality	Pollutant	Pollu cases
Region	Category	Number	Waterbody	Location	Concern	Standard	Parameters	Sources
						· · · · · · · · · · · · · · · · · · ·		
SC	Category	30203-	King Salmon	King	N/A	Petroleum	Petroleum	Landfill,
50	Curegory		0		- 17.2			,
	2	001	Creek	Salmon		Hydrocarbons,	Products	Military,
						Oil & Grease		unknown
						On & Grease		ulikilowii
								drum

DEC placed this waterbody was placed on the 1996 Section 303(d) list for petroleum hydrocarbons, metals and pesticides. DEC and

the Air Force signed a Monthly influent and effluent samples are analyzed for all potential contaminants decision (R\PhiD) for Groundwater Zone 3 during was signed by DEC and Air Force in April 2000. The ROD required Future activities of decision (ROD) include: landfill cover inspection and maintenance; continued operation of the water treatment system; annual monitoring of groundwater (A-Aquifer and B-Aquifer) and surface water; maintain institutional controls maintenance; and a 5-year review. DEC found no Based on the extensive sampling program, there have been no surface water quality standard exceedances ndtherefore placed this the waterbody was placed in Category 2 in the 2002 Integrated Report/2003. at this site a

SC	Category	20701-	Lookout	Afognak	N/A	Residues	Bark & Woody	Log
	2	501	Cove	Island			Debris	Transfer
								Facility

DEC placed Lookout Cove was previously placed on the Section 303(d) list for non-attainment of the residues standard for bark and woody debr s. During 2002 log transfer facility (LTF) Dive survey information for this log transfer facility from 2002 reported 1.2 place this waterbody on the list? of continuous residues coverage; and during 2003, the LTF dive survey information reported 0.7 acre of continuous bottom coverage Comment [j65]: Which LTF? These dive surveys document that the residues coverage is under the 1.5 acres impairment standard for residues and therefore DEC removed thi the waterbody was removed from the 2004 Category5/Section 303(d) list and placed in Category 2 in 2004.

Comment [j43]: May want to use a consistent approach to the type and amount of information

provided in each narrative. In some cases, such as

Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding

Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous cases it is difficult for the reader to determine who

conducted the actions.

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A. Waterbody Categories 2 through 5

Category 2 Waterbodies

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Previous *Impairing* AK ID Water Quality Area of **Pollutant** Waterbody Location Region Category Number Concern Standard Parameters Sources SC 30204-Naknek N/A Petroleum Petroleum Landfill, Category King 001 River Salmon Hydrocarbons, Products, TCE Fuel Oil & Grease Storage, Toxic & Other former **Deleterious** marina, Organic and Military

DEC placed Naknek River on the 1996was Section 303(d) listed in 1996 due to and not expected to meet water quality standards because of pollutants sources coming from tributary waterbodies (Eskimo Creek, King Salmon Creek, and Red Fox Creek). In 1998DEC removed

Naknek River was removed from the 1998 Section 303(d) list based on since there were other pollution control requirements in place primary contaminant sources (a drum storage area and underground storage tanks) were removed prior to 1988. In 1998, and later in the tanks, etc.?

(Comment [j66]: Who conducted the removal of the tanks, etc.?

(Comment [j67]: Who conducted the removal of the tanks, etc.?

(Comment [j67]: Who made this determination that additional monitoring and tracking. The Air Force Samples were collected samples from the tanks, etc.?

(Comment [j67]: Who made this determination that additional monitoring was needed?

In December 1998, oil sheen was observed on the Naknek River bank adjacent to the King Salmon Morale, Welfare, and Recreation Marina. In 1999, DEC and the Air Force signed a final record of decision (ROD) was signed by DEC and Air Force for a groundwater area located approximately one half mile downstream from the main runway at the King Salmon Airport that includes approximately

3,000 feet of the Naknek River's north shore. Future activities identified in the ROD included: passive product recovery system operation and maintenance; annual monitoring of groundwater and surface water; landfill cover inspection and maintenance; implementing and maintaining institutional controls; and a 5-year review. Between September 2002 and January 2003, the Air Force removed approximately 1,100 cubic yards of petroleum contaminated soil—was removed and the Air Force will continue to monitor g. Groundwater, surface Comment [j68]: Why will surface water

1,100 cubic yards of petroleum contaminated soil-was removed and the Air Force will continue to monitor g. Groundwater, surface and sediment monitoring will continue at the marina to evaluate remedial efforts and attenuation processes. No seep or sheen has been monitoring continue when WQS are being met? observed following the source removal action. Naknek River was placed in Category 2 in 2004.

Inorganic Substances

IN	Category 2	50404- 001	Red Dog Creek -	Near Red Dog	N/A	Dissolved Inorganic	Total Dissolved Solids	Mining
			Ikalukrok Creek	Operation		Substances		

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous cases it is difficult for the reader to determine who conducted the actions.

A. Waterbody Categories 2 through 5

Category 2 Waterbodies

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category 2	, acci boaics	accaning .	onic ases out ms	difficient of no	dutu una mi	ormation to determine	on remaining ases a	Lake
							<u>Previous</u>	Prev Cree
							<i>Impairing</i>	Impai cases
		AK ID			Area of	Water Quality	<u>Pollutant</u>	Pollu cond
<u>Region</u>	<u>Category</u>	Number	<u>Waterbody</u>	<u>Location</u>	Concern	<u>Standard</u>	<u>Parameters</u>	Sources
	l	1						

EPA approved DEC's reclassification of the uses of Red Dog and Ikalukrok Creeks for industrial water supply in February 2002. El Comment [j69]: This is very confusing narrative. approved a site specific criterion for zinc in July 1998. The facility was issued a water quality-based permit and is an existing control this waterbody into compliance with applicable water quality standards (fresh water industrial water supply) for total discontinuous water supply) for total discontinuous water supply. will bring the waterbody into compliance with applicable water quality standards (fresh water industrial water supply) for total disso solids (TDS), cadmium, lead, selenium, and the site specific standard for zinc. DEC placed Red Dog and Ikalukrok Creeks in Categoria in the 1998 Integrated Report based on the water quality permit. DEC developed aA site-specific criterion for TDS which EPA as developed and approved by EPA on April 21, 2006. Both Red Dog/Ikalukrok Creeks met the site-specific criterion for TDS. There In the 1998 Integrated Report Red Dog and Ikalukrok Creeks was placed in Category 4b, However DEC moved this waterbody to Category 2 in the 2006 Integrated Report, with the development of the reclassification, the water quality based permit, and the site prion for zinc and TDS, and both Red Dog/Ikalukrok Creeks meet 1500 mg/L SSC for TDS, they are in attainment of w ards and therefore placed in Category 2 in 2006. quality stan

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous cases it is difficult for the reader to determine who conducted the actions.

Was this waterbody ever listed for cadmium, lead, selenium? Is this waterbody meeting WQS for cadmium, lead, selenium? Have site specific criteria been developed for cadmium, lead, selenium? If so, are these pollutants meeting the site specific criteria?

Comment [j70]: Who issued this permit? Is this a state permit issued by DEC or a NPDES permit issued by EPA?

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Region	<u>Category</u>	AK ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Previous Impairing Pollutant Parameters	Preving Creek, your recomme cases it is Pollu conducted Sources
SC	Category 2	30204- 002	Red Fox Creek	King Salmon	N/A	Petroleum Hydrocarbons, Oil & Grease, Toxic & Other Deleterious Organic and Inorganic Substances	Petroleum Products, Diesel Range Organics (DRO), Benzene and Trichloroethene (TCE)	Landfill, Fire Training Areas, Military

DEC placed Red Fox Creek in the 1994was Section 303(d) listed in 1994 for non-attainment of the petroleum hydrocarbons and oil and grease standard for petroleum hydrocarbons and the toxic and oother deleterious oorganic and i-horganic substances standard for metals. Information provided by EPA's Comprehensive Environmental Response Compensation Liability Act (CERCLA) or "Superfund" group showed that the waterbody was water quality impaired from petroleum hydrocarbons and trichloroethene (TCE). Consequently, DEC dropped the metals parameter was dropped from this listing. Water quality assessment studies were completed for the waterbody and

a remediation plan has been implemented. Red Fox Creek formerly consisted of a small stream prior to the airport runway constructed Comment [j71]: Who conducted the WQ the 1940s. It is currently a losing stream with minimal flow that enters the groundwater system as it intersects the runway. Red Fox (assessment and developed the remediation plan? does not directly impact the Naknek River. Contaminants of concern included diesel range organics (DRO), gasoline range organics (GRO), and benzene in surface water, and DRO, GRO, benzene, toluene, tetrachloroethene, and poly aromatic hydrocarbons (PAHs) in sediment. Surface water and sediment sample data from 1997; based on the 5 year old data, showed that Red Fox Creek did not meet water quality standards and DECwas placed this waterbody in Category 5. The 1997 remedial actions included the secondary source removal and treatment of the contaminated soil in on-facility biocells. The 1998 remedial actions included the installation of an air sparging and soil vapor extraction system. The treatment system had been intermittently and seasonally operated from 1999. The 2001 groundwater samples reveal DRO, GRO, TCE, and benzene above groundwater cleanup levels. During the Remedial Process Optimization Phase II meetings in 2002 which included participants from EPA, DEC, Air Force, Pacific Air Forces, Air Force Center for Environmental Excellence, and consultants, based on system's operational data it was agreed that the system should be converted into a

biovent system to more adequately treat the contamination; the conversion occurred in late 2002. No surface water quality criteria-w Comment [j72]: How do these actions directly exceeded in 2002 and 2003. Future activities as required by the ROD for this specific site include: continued operation and mainten impact the surface water impairments? of biovent system; monitored natural attenuation of the groundwater; annual groundwater, surface water, and sediment sampling; implement and maintain institutional controls; and 5-year review. This water was removed from Category 5 (Section 303(d) list) and Most of the activities pertain to groundwater and the placed in Category 2 in 2004.

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding ou provide a very detailed narrative. Highly end using active voice—since in numerous s difficult for the reader to determine who ed the actions.

Comment [j73]: Is this information necessary? reader would be confusing as to why surface WQ monitoring would be conducted if the water is already meeting WQS.

A. Waterbody Categories 2 through 5

Category 2 Waterbodies Alaska's 2010 Integrated Water Quality Monitoring and Assessment Report Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained.								Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox	
<u>Region</u>	<u>Category</u>	<u>AK ID</u> <u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Area of Concern	<u>Water Quality</u> <u>Standard</u>	<u>Previous</u> <u>Impairing</u> <u>Pollutant</u> <u>Parameters</u>	<u>Prev</u> Impai <u>Pollu</u> Sour	recommend using active voice—since in numerous cases it is difficult for the reader to determine who conducted the actions.
SC	Category 2	30104- 601	Saint Paul Island Lagoon	St. Paul Harbor, St. Paul Island	N/A	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Leak Abo Grou Stora Tan	ove und age

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Previous *Impairing* AK ID Water Quality Area of **Pollutant** Region Category <u>Number</u> Waterbody Location **Standard** Parameters Sources Concern DEC placed This segment of Saint Paul Island Lagoon was placed on the 2002/2003 Section 303(d) list for the petroleum hydrocarbons,

oil & grease standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water on a daily basis. The pollutant source was a standard for petroleum products. An oil sheen was observed on the water of the products and the petroleum products are the products and the petroleum products are the products and the petroleum products are have been from spillage during fuel handling. An area, approximately 120 feet by 120 feet showed evidence of diesel contamination and extended from the surface to groundwater at 3 to 5 feet. Groundwater movement from the contaminated area threatened uncontaminated wetlands to the west and northwest. The areal extent of contamination was estimated at 10,000 square feet. Leaking above ground-st Comment [j75]: Who estimated the extent of the tanks and diesel seepage were on-going into the lagoon from as early as the 1980's. Controls implemented have controlled the sheen contamination? DEC? therefore this water was removed from the 2008 Section 303(d) list in 2008.

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Prev Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous cases it is difficult for the reader to determine who Pollu conducted the actions.

Comment [j76]: What controls? Can you

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Previous *Impairing* AK ID Water Quality Area of **Pollutant** Waterbody Region Category Number Location Concern **Standard** Parameters Sources Bark & Woody SE 10302-Corner Bay N/A Residues Category Tenakee Log transfer 502 Inlet, Debris facility

> Baranof Island

Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous cases it is difficult for the reader to determine who conducted the actions.

Sources

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as

DEC placed This waterbody was placed on the 1998 Section 303(d) list for debris. At that time, dive survey information from May 1996 demonstrated an exceedance of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transfer Facility Siting, Construction, Operation and Monitoring Reporting Guidelines, October 21, 1985) at 1.18 acres of bottom coverage. Dive survey reports from June 2002 of 0.1 acre and from July 2001 of 0.6 acre bottom coverage document that this water is compliant with standards. DEC removed This water was removed from the 2002 Category 5 (Section 303(d) list) in 2002/2003.

SE	Category	10204-	Cube Cove	NW	N/A	Residues	Bark & Woody	Log transfer	ı
	2	502		Admiralty			Debris	facility	
				Island			I		ı

DEC first placed Cube Cove on Admiralty Island in Southeast Alaska was first placed on Alaska's 1998 Section 303(d) list in 1998 as impaired for residues from log transfer facility (LTF) operations. Cube Cove remained on the subsequent 2002/2003 Section 303(d) list. The 1998 Section 303(d) listing criteria required only one dive survey documenting an exceedance 1.0 acre of continuous coverage bark residues. A January 1998 dive survey documented 9.5 acres of continuous coverage bark on the marine bottom. Subsequent dive surveys document that the Cube Cove LTF has a-a trend of reduced continuous coverage bark residues. Dive surveys document: 1.35 acres in April 2001 and 1.2 acres in December 2002. A February 2004 dive survey documented 0.9 acre of continuous bark residue coverage and therefore DEC removed Cube Cove was removed from the 2004 Category 5/Section 303(d) list and moved to Category 2 in 2004.

SE	Category	10202-	Hamilton	Kake	N/A	Residues	Bark & Woody	Log
52	Cuttgory			Taune	14/12	residues		- 0
	2	601	Bay				Debris	Transfer
								Facility

DEC placed this waterbody was placed on the 1994 Section 303(d) list for debris. Past dive surveys had indicated that excessive bark existed on the bottom of Hamilton Bay as a result of logging operations on Kupreanof Island that use the Hamilton Bay log transfer facility. Dive survey reports from September 2000 of 0.6 bottom coverage and -from the 2002 of 0.6 acre document that this water is compliant with standards. This water was removed from the 2002 Category 5 (Section 303(d) list) in 2002/2003.

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Previous **Impairing** Impal cases it is difficult for the reader to determine who Water Quality AK ID Area of **Pollutant** Pollu conducted the actions. <u>Waterbo</u>dy Region Category Number Location Standard Parameters Sources Concern SE 10202-Mitkof N/A Sediment Sediment Category Hammer Urban 2 006 Slough Island Runoff, Gravel

DEC placed tThis waterbody on the 1994was Section 303(d) listed in 1994. DEC staff has coordinated best management practices (BMP) implementation for the waterbody from the responsible parties. DEC staff inspected the Slough in April 2000 and confirmed that BMP implementation has been effective in controlling sedimentation and have recommended that this waterbody requires no further action. that I in the waterbody attaining water quality standards. The water quality data in DEC'sthe files demonstratesupports that the no longer impaired. DEC placed DEC staff inspected the Slough in April 2000 and confirmed that BMP implementation has plished and effective in controlling sedimentation and have recommended that this waterbody requires no further action. Thise water was placed in Category 2 in the 2002 Integrated Report/2003.

SE	Category	10201-	Hobart Bay	Mainland,	N/A	Residues	Bark & Woody	Log transfer
	2	501		\mathbf{SE}			Debris	facility
				Stephens				
				Passage				

DEC placed Hobart Bay on the 1998 was Section 303(d) listed in 1998 for non-attainment of the residues standard for bark and woody debris. Dive survey information from May 1996 (log transfer facility known as Hobart Bay 3) documented a significant exceedance of the interim intertidal threshold bark accumulation level (as per the ATTF Log transfer facility Siting, Construction, Operation and Monitoring\Reporting Guidelines, October 21, 1985) at 2.3 acres of bottom coverage. 1.3 acres of marine bottom adjacent to the log transfer facility was listed as impaired. A December 2007 dive survey and assessment documents showed documented thatthat the LTF and log storage area contained no continuous coverage by bark debris and only a few small patches of discontinuous coverage by bark debris. As a result of this documentation showing the Bay The December 2007 dive survey and assessment documents that this facility wais attaining water quality standards, DEC_and the water is removed this water from the 2008 Section 303(d) in 2008.

SE	Category 2	10103- 502	Klawock Inlet	Klawock Island, W. Prince of Wales	N/A	Residues	Bark & Woody Debris	Log transfer facility
İ				Island				

DEC placed The area just off the dock and log transfer area Klawock Inlet on the 2002 was Section 303(d) listed in 2002/2003 for non-attainment of the residues standard for bark and woody debris. A dive survey conducted in February 2004 documented 1.0 acres of continuous residues Comment [177]: Who conducted the survey—the coverage and a subsequent dive survey report in November 2004 documents continuous residues coverage at 0.5 acre. Two consecutive dive LTF or DEC survey reports document that continuous residue coverage is under the 1.5 acre impairment standard and therefore DEC removed this waterbody -from the 2006Category 5/Section 303(d) list in 2006.

Comment [j43]: May want to use a consistent approach to the type and amount of information

provided in each narrative. In some cases, such as

Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding

Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous

Mining

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Previous **Impairing** AK ID Water Quality Area of **Pollutant** Waterbody Region Category Number Location **Standard** Parameters Concern Sources SE 10203-Category Nakwasina Baranof 8 miles Sediment, Sediment. Timber 001 River Island, **Turbidity Turbidity** Harvest

Sitka

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice—since in numerous Impal cases it is difficult for the reader to determine who Pollu conducted the actions.

DEC placed Nakwasina River was placed on the 1998 Section 303(d) listed for non-attainment of the sediment and turbidity standards. Past land use activities, such as had created a number of concerns for water quality and fish habitat. The harvest of riparian timber and location and lack of maintenance of the road system, created the following concerns: decreased channel stability, landslides and small slope failures, increased sediment levels, loss of aquatic habitat, siltation of holding pools for migrating salmon, and alteration of watershed hydrology. Watershed effects resulted in use impairment for aquatic life. The Forest Service submitted a two year Water Quality and Aquatic Habitat Restoration Assessment in February of 2009 and recommended removal from the 303(d) list based on their results. The data demonstrates that turbidity levels have decreased below state water quality standards. DEC removed this water and, the mofrom the ved to Category 2 in 2010 Section 303(d) list...

SE	Category	10202-	Point	Kupreanof	N/A	Residues	Bark & Woody	Log transfer
	2	801	Macartney	Island,			Debris	facility
				Kake				

DEC placed This waterbody on the 1998was Section 303(d) listed for residues in 1998. At that time, dive survey information documented an exceedance of the interim intertidal threshold bark accumulation level (as per the Log Transfer Facility Siting, Construction, Operation, and Monitoring\Reporting Guidelines, October 21, 1985) from February 2001 at 1.2 acres of bottom coverage. A dive survey report Comment [j78]: Who conducted the dive March 2002 documents 1.0 acre bottom coverage and another from November 2002 of 0.52 acre validate that this water is compliant survey?

standards. <u>DEC removed t</u>This water was removed from the <u>2002 Category 5</u> (Section 303(d) list) in <u>2002/2003</u>.

A. Waterbody Categories 2 through 5

Comment [j43]: May want to use a consistent approach to the type and amount of information

provided in each narrative. In some cases, such as

Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding

recommend using active voice—since in numerous

Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly

Category 2 Waterbodies

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Previous **Impairing** Impal cases it is difficult for the reader to determine who AK ID Area of Water Quality **Pollutant** Pollu conducted the actions. Region Category Number Waterbody Location Standard Concern Parameters Sources SE 10202-Rowan Bay N/A Bark & Woody Category Knin Residues 602 Island Debris

Log Transfer **Facility** DEC placed (This waterbody was placed on the 1996 Section 303(d) list for debris (bark debris from deposition at a log transfer facility (LTF)). Past dive surveys have shown an exceedance of the interim intertidal threshold bark accumulation level (as per Log transfer facility Siting, Construction, Operation and Monitoring Reporting Guidelines, October 21, 1985). Dive survey reports from May 2002 of

SE	Category	10202-	Saginaw Bay	Kuiu	N/A	Residues	Bark & Woody	Log
	2	802		Island			Debris	Transfer
								Facility

0.8 acre and from June 2001 of 0.6 acre bottom coverage document that this water is compliant with standards. DEC removed (This water

was removed from the 2002-Category 5 (Section 303(d) list) in 2002/2003.

DEC placed (This waterbody was placed on the Section 303(d) list for excessive residues associated with a log transfer facility (B-LT Comment [JC79]: Which list?

Dive survey information from 2001 documented a significant exceedance of the interim intertidal threshold bark accumulation level (as per Log Transfer Facility Siting, Construction, Operation and Monitoring\Reporting Guidelines, October 21, 1985) at 1.7 acres of bottom coverage. A dive survey report from May 2002 documents 0.7 acre bottom coverage and validates that this water is compliant with standards. DEC removed this water was removed from the 2002-Category 5 (Section 303(d) list) in 2002/2003.

SE	Category	10203-	Saint John	Baranof	N/A	Residues	Bark & Woody	Log transfer
	2	502	Baptist Bay	Island			Debris	facility

Dive survey information from September 2000 documented a significant exceedance of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transfer Facility Siting, Construction, Operation and Monitoring\Reporting Guidelines, October 21, 1985) at 1.32 acres of bottom coverage. DEC considered Saint John Baptist was considered for 2002 Category 5/Section 303(d) listing but during the 2002/2003 Integrated Report development process, but the facility came into compliance with the residues impairment standard. A dive survey report from June 2002 documented 0.2 acre bottom coverage and validates that this water is compliant with the residues standard.

SE	Category 2	10203- 504	Salt Lake Bay	Port Frederick, Chichagof	N/A	Residues	Bark & Woody Debris	Log Transfer Facility
				Island				Facility

DEC placed this waterbody was placed on the 1998 Section 303(d) list for debris. Dive survey information from October 1991 demonstrated an exceedance of the interim intertidal threshold bark accumulation level (as per Log Transfer Facility Siting, Construction, Operation, and Monitoring\Reporting Guidelines, October 21, 1985) at 1.16 acres of bottom coverage. Dive survey reports from May 2002 of 0.1 acre and from March 2000 of 0.3 acre bottom coverage document that this water is compliant with standards. DEC removed this water was removed from the 2002 Category 5 (Section 303(d) list) in 2002/2003.

A. Waterbody Categories 2 through 5

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Region Category Number Waterbody Location Concern Standard Parameters Sources	SE	Category 2	10303- 006	Sawmill Creek	Haines	N/A	Residues	Debris	Urban Runoff
	<u>Region</u>	Category		<u>Waterbody</u>	<u>Location</u>			Pollutant	Pollu case

Although DEC determined that this water was impaired for debris, DEC did not place tThis waterbody water on the 1996 was never Section 303 d) list because of "other pollution controls," ed for debris but placed in Category 4b in 1996. There was highway and maintenance debris. Takshanuk Watershed Council completed sSome debris removal work, in addition to a culvert replacement and seeding in was completed in 1997. There was highway and maintenance debris. Plans called for moving the stream away from the began using this format in 2002. seeding in was completed in 1997. There was highway and maintenance debris. Plans called for moving the stream away from the highway/street in two areas and constructing a dike in another area, - Plans also called for establishing vegetative buffers, swales, an Comment [JC81]: Who conducted these matting to improve filtration of run-off entering the stream. Priority actions for this water includes: design and implement an interage watershed assessment and a recovery plan; establish -water quality monitoring objectives and implement water quality monitoring plants. work with city of Haines to review and develop stormwater plans in accordance with EPA and DEC requirements. The Takshanuk Comment [JC82]: Is there a name for this plan? Watershed Council is currently monitoring the health of Sawmill Creek through benthic macroinvertebrate sampling and fish trapping If so, when and how developed the plan?

The Takshahuk Watershed Council is received an ACWA NPS Water Quality grant to conducting a watershed assessment and associated

monitoring strategy on Sawmill Creek to. The project proposed to remove debris and car bodies from the creek, stabilize and revegetate the stream banks and conduct a physical watershed assessment and . The project will also research available sources for historical information and data for Sawmill Creek and work with local agency partners to determine additional water quality and habitat data needs for the watershed. Takshanuk Watershed Council conducted aAn extensive residues clean-up was undertaken in 2006 and 2007 resulting in with the emoval of 27,000 pounds of scrap metal and, additional 33 bags of trash. The bulk of the "debris" was removed in 2007 camewas from legacy activities, including; abandoned vehicles used for stream-bank stabilization. Control measures (through state and federal laws) are in place to prevent similar activities from occurring in the future (state and federal laws). M, however, more importantly, the public no longer accepts or tolerates public acceptance of using use of abandoned vehicles for stream-bank stabilization is no longer tolerated. The City and Borough of Haines police department also enforces such types of illegal disposal practices. Spring Clean up events are an annual eventoccurrence within the City of Haines. DEC does not have the resources to document litter trends in areas outside of Juneau. DEC relies on the best professional judgment from state and federal agencies, and credible information from the local watershed group (Takshanuk Watershed Council) to establish whether or not the creek meets water quality standards for debris. The majority of debris within the creek, for which the water was placed in Category 4b originally for, has been removed and that any remaining of future debris/residues problems are not unlike that of any other urban Alaskan waterway and are being addressed by the City of Haines. DEC Consequently it has been determined that the waterbody meets the residues criterion and the waterbody was moved the waterbody from Category 4b to Category 2 in the 2008 Integrated Report.

SE	Category	10203-	Schulze	Fish Bay,	N/A	Residues	Bark & Woody	Log Storage
	2	503	Cove	Baranof			Debris	Area
				Island				

DEC placed This section of Schulze Cove ON THE 1998 was Section 303(d) listed in 1998 for non-attainment of the residues standard for bark and woody debris. Historically, log storage activities severely impacted Schulze Cove. The Schulze Cove log storage area covers the whole Cove. DEC's rReview of US Fish and Wildlife Service video documentation and dive report (September 1995 report on dives from July 27 & 29, 1995, several transects) revealed extensive bark deposition (> one acre & > than 10 cm). Historically, log storage activities se erely impacted Schulze Cove. A December 2007 dive survey and assessment documents that this facility is attaining water ards and is removed from the Section 303(d) list in 2008. The 2007 dive assessment work used a parallel pattern to survey the quality stand site and consisted of 17 transects at 300 foot spacing intervals. The sample point frequency was at 300 foot spacing intervals. The sample point frequency was at 300 foot spacing intervals. The survey December 2007 survey documented that the log storage area contained no continuous coverage by bark debris, and sted of 17 transects at 300 foot spacing intervals. The sample point frequency was at 300 foot intervals using visual surve 25.02 acres of discontinuous coverage by bark debris. Thee 2007 dive survey and assessment documents that this facility is attaining water quality standards and DEC was removed the Cove from the 2008 Section 303(d) list in 2008.

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice-since in numerous cases it is difficult for the reader to determine who conducted the actions.

Comment [JC80]: DEC did not use the

A. Waterbody Categories 2 through 5

Category 2 V	Vaterbodies –	_	itegrated Water		s 2010 toring and	Assessment Report Cormation to determine	e if remaining uses a	are attaine	
Region	Category	<u>AK ID</u> <u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	<u>Previous</u> <u>Impairing</u> <u>Pollutant</u> <u>Parameters</u>	Previ Impai Pollu Sour	recommend using active voice—since in numerous cases it is difficult for the reader to determine who conducted the actions.
SE	Category 2	10103- 602	Thorne Bay	Prince of Wales Island	N/A	Residues	Bark & Wood Debris	Histo Lo Tran Faci	g sfer

A. Waterbody Categories 2 through 5

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Previous **Impairing** AK ID Area of Water Quality Pollutant | Region Category Number Waterbody Location Standard Parameters Concern Sources

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly recommend using active voice-since in numerous Impal cases it is difficult for the reader to determine who Pollu conducted the actions.

The Thorne Bay historical marine log transfer facility (LTF), which consisted of both a near shore log transfer area and an associated log (LSA), was Section 303(d) listed in 1994 for non-attainment of the residues standard for bark and wood debris. Log transfer and storage activities began in 1962 and caused the accumulation of woody debris on the bottom of the head of Thorne Bay. Log transfer ctivities ended in 2000 and the operator, the U.S. Forest Service, maintains no plan to resume them; all equipment and and storage e been removed. A key feature of the recovery of the former log transfer and storage area is the Thorne River which empties facilities ha and deposits sediments onto a large sand and gravel delta where they mix with debris and aid in biological recovery. The Log Storage Ar a: Dive surveys of the LSA conducted in July 2001 and June 2002 documented 1.1 acres of bark and wood debris on the om. Dive surveys in 2003 and 2005 detailed the benthic health of 161 acres of the former LSA finding: 1) bark debris is marine bott nposed to small fragments and is mixed with natural sediments; 2) the bottom is biologically recovered, exhibiting mostly mostly deco mature "Sta e III" biological communities; and 3) the site is an "extremely healthy coastal embayment." DEC determined, based on the essment, the residues standard is met in the former LSA and removed it from the Section 303(d) list and placed it in detailed be Category 2 2004. As of the 2008 Integrated Report the LSA remains in Category 2 with no known impairments. The Log Transfer the LTF cor lucted in July 2001 and June 2002 documented 2.6 and 1.1 acres, respectively, of bark and wood debris on the marine bottom. An April 20 04 dive survey of the LTF documented 6.5 acres of bark and woody debris. The former LTF remained on the Section 303(d) ned area of approximately 35 acres between the LTF shoreline and the boundary of the former log storage area established in 95 benthic assessment. A December 2007 dive survey documented a reduced area of impaired marine bottom of only 7.5 rest of the previous area of impairment as meeting the residues criterion and attaining water quality standards. This suggests al recovery is proceeding and is well advanced within the area associated with the LTF. A residues TMDL for the Thorne Bay LTF was completed and approved by EPA on May 8, 2007. With the completed TMDL, the LTF was removed from the Section 303(d) ed in Category 4a in 2008 an approved TMDL for residues.DEC placed the Thorne Bay which consisted of both a near-s Comment [JC83]: You put a water not a facility

log transfer area and an associated log storage area (LSA), on the 1994 Section 303(d) list for non-attainment of the residues standar on the list.

od debris. Log transfer and storage activities began in 1962 and caused the accumulation of woody debris on the bottom of

the head of Thorne Bay. Log transfer and storage activities ended in 2000 and the operator, the U.S. Forest Service (USFS), has no plan to resume then; USFS removed all equipment and facilities. A key feature of the recovery of the former log transfer and storage area is the r which empties into the bay and deposits sediments onto a large sand and gravel delta where they mix with debris and aid in covery. The Log Storage Area: Dive surveys of the LSA conducted in July 2001 and June 2002 documented 1.1 acres of biological re od debris on the marine bottom. Dive surveys in 2003 and 2005 detailed the benthic health of 161 acres of the former LSA. lude: 1) bark debris is mostly decomposed to small fragments and is mixed with natural sediments; 2) the bottom has recovered and exhibits mostly mature "Stage III" biological communities; and 3) the site is an "extremely healthy coastal biologically

embayment

of the 2008

ntegrated Report.

4 Section 303(d) list. Transfer Facility: Dive surveys conducted in 1988 and 1990 documented approximately 55 acre bark accum lation around the LTF. Dive surveys of the LTF conducted in July 2001 and June 2002 documented 2.6 and 1.1 acres, surveys? Use active voice if possible of bark and wood debris on the marine bottom. An April 2004 dive survey of the LTF documented 6.5 acres of bark and s. The former LTF remained on the Section 303(d) list for a defined area of approximately 35 acres between the LTF the boundary of the former log storage area established in the 2003-2005 benthic assessment. A December 2007 dive survey shoreline an a reduced area of impaired marine bottom of only 7.5 acres and the rest of the previous area of impairment as meeting the documented

DEC determined, based on the detailed benthic assessment, the residues standard is met in the former LSA and removed i

residues crit erion and attaining water quality standards. This suggests that biological recovery is proceeding quickly within the area associated with the LTF. DEC developed and EPA approved a residues TMDL for the Thorne Bay May 8, 2007 and DEC removed Comment [JC85]: TMDLs are developed for portion of the Bay from the 2008 Section 303(d) list and placed in Category 4a. DEC moved the unimpaired portion of Bay to Category waters not far

Comment [JC84]: Who conducted the dive

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A. Waterbody Categories 2 through 5

Comment [j43]: May want to use a consistent approach to the type and amount of information provided in each narrative. In some cases, such as

Category 2 Waterbodies

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				provided in each narrative. In some cases, such as					
		Ir		Chena River or Captain's Bay, you provide a very					
C-4 2 VI	(7 - 4 1 1!		brief narrative and in other cases, such as Harding						
Category 2 W	vaterbodies –		Lake, I teli shore Bellinort Lagoons of Red I ox						
							Previous	Prev	Creek, you provide a very detailed narrative. Highly
							Impairing	Impai	recommend using active voice—since in numerous
		4 *** **						n II	cases it is difficult for the reader to determine who
		<u>AK ID</u>			<u>Area of</u>	<u>Water Quality</u>	<u>Pollutant</u>	<u>Pollu</u>	conducted the actions.
Region	Category	Number	Waterbody	Location	Concern	Standard	Parameters	Sour	
SE	Category	10103-	Tolstoi Bay	NW Bight	N/A	Residues	Bark & Woody	Log Sto	orage
	2	802	_	of Tolstoi			Debris	Are	ea
	_			Bay, Prince					
				of Wales					

Island

DEC placed Tolstoi Bay-had been on the 1998 Section 303(d) list since 1998 for non-attainment of the residues standard for bark and woody debris. A dive survey report from June 1994 for this area (known as Tolstoi Bay 2) reported 1.82 acres of bottom coverage from debris. 0.8 acre of marine bottom beneath this log storage area. A, however a March 2003 dive survey report shows 0.7 acre of bark on the bottom. T-and therefore DEC removed the waterbody was removed from the 2002 Category 5/Section 303(d) list and moved to Category 2 in 2002/2003.

A. Waterbody Categories 2 through 5

Category 2 Waterbodies

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Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained Lake, Nearshore Beaufort Lagoons or Red Fox

Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding

Region	<u>Category</u>	AK ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	<u>Water Quality</u> <u>Standard</u>	Previous Impairing Pollutant Parameters	Previ Creek, yo	anshore Beaution Lagoons of Net 10A purpovide a very detailed narrative. Highly and using active voice—since in numerous s difficult for the reader to determine who d the actions.
SE	Category 2	10102- 502- 001	Tongass Narrows 1	Tongass Narrows, Eastern Channel, SE of Thomas Basin	N/A	Residues	Seafood Residues, Seafood Processing Wastes	Seafood Processing Facility	

DEC placed this This-waterbody segment was placed in Category 4b for residues in 2002 Integrated Report/2003. The seafood processing facility exceeded its one acre zone of deposit standard for residues associated with its discharge permit and was issued a compliance order/consent decree from the U.S. Environmental Protection Agency for non-compliance with its waste discharge limitations. Additionally the facility has discharged seafood sludge, deposits, debris, scum, floating solids, oily wastes or foam, which alone, or in combination with other substances caused a film, sheen emulsion or scum on the surface of the water. A 2005 dive survey reported a reduction of 0.31 acre from the 2004 survey and a total acreage of 1.22 and compliance with the residues impairment standard. Additionally, EPA's Region 10 compliance unit reported that the seafood processing facility's pile size is now 0.5 acre and the facility is in compliance with the consent decree and their NPDES permit. Consequently, DEC moved Tongass Narrows 1 was moved from Category 4b to Category 2 in 2006 Integrated Report.

SE	Category	10102-	Tongass	Tongass	N/A	Residues	Seafood	Seafood
	2	502-	Narrows 2	Narrows,			Residues,	Processing
		002		Eastern			Seafood	Facility
				Channel,			Processing	
				SE of			Wastes	
				Thomas				
				Basin				

DEC placed This waterbody segment was placed in Category 4b for residues in 2002 Integrated Report 2003. Previously, the seafor Comment [j86]: Explain the basis on placing this processing facility exceeded its one acre zone of deposit standard for residues associated with its discharge permit and was under compliance order from the U.S. Environmental Protection Agency for non-compliance with its waste discharge limitations. Additio the facility had discharged seafood sludge, deposits, debris, scum, floating solids, oily wastes or foam, which alone, or in combination with other substances caused a film, sheen emulsion or scum on the surface of the water. EPA conducted a compliance inspection facility in the Fall of 2006. Reports from this compliance inspection showed found that the ZOD is now less than 1.0 acre at 0.5 acre all of this (oily wastes, foam)?

waterbody in 4b. What was used as "other pollution

Comment [j43]: May want to use a consistent approach to the type and amount of information

provided in each narrative. In some cases, such as

bottom residues. Tand the facility is compliant with the Consent Decree and their NPDES permit. This waterbody segment is now meeting water quality standards and DEC moved this waterbody from Category 4b to Category 2 in the 2008 Integrated Report.

SE	Category	10103-	Twelvemile	Prince of	N/A	Residues	Bark & Woody	Log Storage
	2	503	Arm	Wales			Debris	Area
				Island				

A. Waterbody Categories 2 through 5

Category 2 Waterbodies Comment [j43]: May want to use a consistent approach to the type and amount of information Alaska's 2010 provided in each narrative. In some cases, such as Integrated Water Quality Monitoring and Assessment Report Chena River or Captain's Bay, you provide a very brief narrative and in other cases, such as Harding Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attained Lake, Nearshore Beaufort Lagoons or Red Fox Creek, you provide a very detailed narrative. Highly Previous recommend using active voice-since in numerous Impairing Impal cases it is difficult for the reader to determine who AK ID Water Quality Pollutant Pollu conducted the actions. Area of Region Category Number Waterbody Location Standard Concern Parameters Sources DEC placed Twelvemile Arm had been on the 1998 Section 303(d) list since 1998 for non-attainment of the Residues standard for bark and woody debris. DEC's rReview of US Fish and Wildlife Service video documentation and a dive transect conducted in 1997 revealed 100% coverage along an entire transect, and numerous sections exceeding 10 cm thickness, i.e., extensive bark deposition (> one acre & > than 10 cm. Log storage activities were at the head of the Arm in a shallow area lacking sufficient flushing capability. The log storage site is inactive. and between 1998 and 2007. No assessments of the marine bottom or dive surveys had been completed between since a 19998 and 2006survey. DEC conducted a December 2007 dive survey and assessment in December 2007. The 2007 survey documented that the log storage area contained no continuous coverage by bark debris and a only a few small patches of discontinuous cover by bar k debris. The using "Plan View Video" and dive survey methods quantified the extent and type of both continuous and is coverage as 0.00 acres of bark debris. The results from this survey show that this waterbody documents that this facil Comment [j88]: It is the waterbody not the meeting the residues criterion and attaining water quality standards. DEC and is removed this waterbody from the 2008 Section 301 facility that must comply with WQS. Fhe 2007 survey documented that the log storage area contained no continuous coverage by bark debris and a only a few list in 2008 small patch of discontinuous cover by bark debris. The using "Plan View Video" and dive survey methods quantified the extent and typ as 0.00 acres of bark debris. The 2007 dive survey ting the residues criterion and attaining water quality standards and is removed from the Section 303(d) list in 2008. facility is SE Category 10102-Ward Cove Ketchikan 80 acres Toxic & Other Pulp Residues, Industrial **Deleterious** Logs, Bark & Organic and Woody Debris, Inorganic Sediment Substances -Toxicity due to Sediment Wood Decomposition Toxicity By-products DEC and EPA determined that the approved and final Record of Decision of the Superfund clean-up for the "Ketchikan Pulp Company, Marine Operable Unit, Ketchikan, Alaska" (March 29, 2000) isare adequate "other pollution controls" for sediment toxicity (4-methyl phenol, ammonia, sulfides) in Ward Cove. Three acres have been dredged in the "area of concern" in addition to thin capping of Comment [j89]: Who conducted the dedging? approximately 30 acres of the marine bottom. Monitoring in 2004 showed that thin layer capping was successful in eliminating sediment toxicity and stimulating colonization by bottom-dwelling invertebrate species. In May 2009 EPA determined that the Ward Cove sediment cleanup moditoring was complete and objectives achieved. Regular monitoring of the sediments since cleanup hasve shown that cleanup goals have been met. Consequently, DEC moved the Superfund portion of Ward Cove has been moved to Category 2 in 2010 Integrated Report. SE 10203-West Port Chichagof Residues Bark & Woody Category Log 804 Frederick Island Dehris Transfer Facility DEC placed this waterbody was placed on the 1998 Section 303(d) list for bark and woody debris. Dive survey information from April 1995 demonstrated an exceedance of the interim intertidal threshold bark accumulation level (as per Log transfer facility Siting, Construction, Operation and Monitoring\Reporting Guidelines, October 21, 1985) at 1.35 acres of bottom coverage. Based on dDive survey reports from April 2001 showing of 0.3 acre bottom coverage and from March 2000 showing of 0.3 acre bottom coverage, DEC document that this water is compliant with standards and the water was removed this waterbody from the 2002 Section 303(d) list in 2002/2003

A. Waterbody Categories 2 through 5

Category 2 Waterbodies

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Category 2 Waterbodies – attaining some uses but insufficient or no data and information to determine if remaining uses are attain Lake, Nearshore Beaufort Lagoons or Red Fox

SE	Category 2	10203- 018	Wrinkleneck Creek Swan Lake	Sitka	N/A	Residues	Solid Waste	Urban
<u>Region</u>	<u>Category</u>	<u>AK ID</u> <u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Area of Concern	<u>Water Quality</u> <u>Standard</u>	<u>Previous</u> <u>Impairing</u> <u>Pollutant</u> <u>Parameters</u>	Prev Impai cases Pollu Sources
Category 2 v	vater boures	attaining .	some uses out ms	sufficient of no	data and mi	ormation to determine	e ii remaming uses t	

DEC placed [This waterbody was placed on the 1996 Section 303(d) list for residues from trash and urban debris. DEC completed tThe Swan Lake Watershed Recovery Strategy and Total Maximum Daily Load (TMDL) and EPA approved the TMDL have been completed (January 2000) and approved by EPAin 2000. Swan Lake watershed has an implemented waterbody recovery plan and an approved TMDL, including annual cleanups and monitoring. (May 2000). In the Spring of 2002 the City and Borough of Sitka (CBS) completed the 3rd annual Swan Lake Cleanup. Three years prior to that volunteers collected over 6600 pounds of trash and debris. Each year the amount collected has been lower than previous years. This cleanup will continue to be an annual event in coordination with a citywide spring clean up. The success of these efforts reflects the community's commitment and the approach of the Swan Lake Watershed Recovery Strategy. TCBS believes the actions to date support moving the Swan Lake watershed to Category 2. Swan Lake watershed has an implemented waterbody recovery plan and an approved TMDL, including annual cleanups and monitoring. CBS has provided the documentation confirming that they are implementing the TMDL and are meeting water quality standards. DEC has concurred that the waterbody is attaining standards and DEC moved the placed the waterbody toin Category 2 in the 2002 Integrated Report/2003.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

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Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

Reg ion	Category	<u>Alaska</u> <u>ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
IN	Category 4a	40402- 001	Birch Creek Drainage:- Upper Birch Creek; Eagle Creek; Golddust Creek	North of Fairbanks	N/A	Turbidity	Turbidity	Placer Mining

DEC placed Birch Creek on the 1992has been Section 303(d) listed since 1992 for turbidity as a result of placer mining activity within the drainage. DEC developed and TMDL and EPA approved the TMDL was developed and finalized on October 10, 1996. DEC removed In 1998 Birch Creek was removed from the 1998 Section 303(d) list and consequently the waterbody remains in Category 4a since a TMDL has been developed on this waterbody. Priority actions for this water include: continued NPDES inspections to monitor reduction of discharges from active mine sites, particularly during storm events; continued implementation of reclamation activities in key areas to address high priority nonpoint source problems; and monitoring at key sites in the drainage to determine the extent of the water quality improvements. BLM be submitted the data results to DEC oncewhen BLM completes its data review finalized. A review of the data from DEC staff will be completed to determine if removal from the 4a list is warranted.

IN	Category	40506-	Garrison	Eielson	N/A	Toxic &	Polychlorinated	Military
	4a	009	Slough	Air Force		Other	biphenyls	Base/
				Base		Deleterious	(PCBs)	Operations
						Organic		-
						and		
						Inorganic		
						Substances		

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

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Category 4a Waterbodies – Impaired but not needing a TMDL; TMDL has been completed.

		<u>Alaska</u>				Water		
Reg		<u>ID</u>			Area of	Quality	<u>Pollutant</u>	<u>Pollutant</u>
<u>ion</u>	<u>Category</u>	<u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Concern	<u>Standard</u>	<u>Parameters</u>	Sources
DEC	placed Garri	ison Slougl	n was placed on th	e 1996 Section	1 303(d) list	for polychloria	nated biphenyls (PC	Bs). Sedime
and f	ish samples t	from the slo	ough contained ele	vated levels of	FPCBs Th	e source of the	PCBs was traced to	a drainage

ent EPA issued, a TMDL for PCBs on September 27, was developed in 1996, and DEC the water was removed this body from the 1998 Section 303(d) list in 1998. The TMDL analysis showed that the remedial actions conducted by on Air Force Base (AFB) should result in attaining water quality standards. Sediment and fish samples from the th contained elevated levels of PCBs. The source of the PCBs was traced to a drainage ditch. Eielson AFBAFB vactum-dredged and removed the upper 18 - 24 inches of soil in the drainage ditch leading into Garrison Slough. Excavation in the drainage ditch extended downward until either groundwater was encountered or field screening results indicated PCB concentrations less than 10 milligrams per kilogram. AFB did not excavate aA 180-foot section of Garrison Slough was not excavated due to discovering concern regarding an unexploded ordinance. To ensure no further ploded ordinances existed, AFB conducted aPCBs are known to remain in the slough sediments above DEC's cleanup une s. An additional munitions sweep. A was conducted in the spring of 2007 which ensured no further unexploded lev also been a significant change in the flow through the slough has caused resulting in sediment build <mark>up, resulting . This should result in any remaining PCB's becoming unaccessible. <u>AFB has and will</u></mark> <u>inued to conducted</u> Some sediment profiling was conducted in Spring 2007 and additional testing is anticipated con yandear. f Fish tissue sampling as part of its effort to has also occurred, evaluate the eEffectiveness of clean up actions will be evaluated in accordance with the 5 year Record of Decision review. The TMDL was finalized on ember 27, 1996 and the waterbody was moved to Category 4a in 1998. The TMDL analysis showed that the remedial ns would result in attaining water quality standards.

IN	Category 4a	40506- 003	Noyes Slough	Fairbanks	7 miles	Residues	Debris	Urban Runoff
_		~			001011			

DEC placed Noyes Slough was placed on the 1994 Section 303(d) list for debris. DEC developed and EPA approved a TMDL was developed and fduring inalized for the debris residue in May 2008.

SC	Category 4a	30102- 604	Akutan Harbor	Akutan Island	N/A	Residues Dissolved Gas	Settleable Solids Low Dissolved Oxygen	Seafood Processing/ Waste

DEC placed Akutan Harbor was originally on the 1994 Section 303(d) list for residues and low dissolved oxygengas. EPA issued a TMDL for biochemical oxygen demand and settleable solids to address these impairments for Akutan Harbor on February 12, 1995 and EPA finalized the associated NPDES permit which contains discharge limits consistent with the TMDL for this areduring Sa in the spring of 1996. The waterbody was removed from the Section 303(d) list in 1998 and remains in Category 4a. The seafood processing facility located in Akutan Harbor is currently under a consent decree that requires a 12% BOD5 reduction in addition to the limitations in the NPDES permit. DEC removed the waterbody from the 1998 Section 303(d) list The associated revised NPDES permit has discharge limits consistent with a TMDL.

SC	Category	20401-	Campbell	Anchorage	10	Fecal	Fecal Coliform	Urban
	4a	004	Creek		miles	Coliform	Bacteria	Runoff
						Bacteria		

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

Comment [j91]: Into the slough?

Comment [j92]: Include information on planned restoration actions recommended in the TMDL.

A. Waterbody Categories 2 through 5

			Ca	tegory 4a		odies			Comment [j90]: Make sure that the narratives have consistent content such as including the original
			Integrated Water		<u>i's 2010</u> sitoring on	d Assessment	Donart		basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in
Cate	gorv 4a Wat		- Impaired but not						the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to
	9 • • • • • • • • • • • • • • • • • • •	Alaska	F		,	<u>Water</u>			consistently include planned or recommended restoration actions such as done on Duck Creek.
<u>Reg</u> <u>ion</u>	Category	<u>ID</u> <u>Number</u>	<u>Waterbody</u>	Location	Area of Concern	<u>Quality</u> <u>Standard</u>	<u>Pollutant</u> <u>Parameters</u>	<u>Pollutant</u> <u>Sources</u>	Would be great to include whether any monitoring is scheduled in the near future.
		L			1	1	or non-attainment o		
			The Campbell Cre ding i.e. , fecal col		Comment [j93]: Please cite the exact name of the study and include who conducted the study. This				
confi	rmedeluded o	only the the	at Campbell Creek	- <u>was water qu</u>	- iality limite	d for fecal coli	form bacteria <u>impai</u>	rmentonly.	comment holds true for the other waters contained in this assessment like Campbell Lake.
			conducted in 2005 leveloped and EPA						
appro	oved by EPA	on June 15	5, 2006.						
SC	Category	20401-	Campbell	Anchorage	125	Fecal	Fecal Coliform	Urban	
	4a	402	Lake		acres	Coliform Bacteria	Bacteria	Runoff	
_			*				-attainment of the f		
					_		1994 <u>),</u> included an a i.e., fecal coliform l		
							ited only for the feet. As a result, DEC dev		
appro	<u>ved a Water qı</u>	ality sampli	ng was conducted in 2005	2005. A TMDI	. was develo	ped TMDL for fe	cal coliform bacteria a	nd approved by	
EPA o	on June 15, 20	06. 20401-	Chester Creek	Anchorage	4.1	Fecal	Fecal Coliform	Urban	
sc	Category 4a	003	Chester Creek	Anchorage	miles	Coliform	Bacteria	Runoff,	
						Bacteria		Industrial	
	*				` '		attainment of the fed 1 2003) was comple		
Ches	ter Creek dra	inage whic	h_identified sever	ral parameters	of concern	and for Chester	Creek, but the asse	essment	
					•		oacteria. <u>DEC devel</u> g dated May 2005) .	oped and EPA	
SC	Category	19020-	Eagle River	Eagle	N/A	Toxic &	Ammonia,	Wastewater	
БС	4a	001	Lugic Inver	River	14/12	Other	Chlorine,	Treatment	
						Deleterious Organic	Copper, Lead, Silver	Facility	
						and	Sirver		
						Inorganic Substances			
Altho	ough Eagle R	iver was n	ever included on a	Section 303(d) list ed . EP		DL for ammonia, co	opper, lead.	Formatted: Font: (Default) Times New
silver	r, and chlorin	<u>e</u> and meta	ıls was completed	by EPA on Ap	ril 12, 199	as part of its	on the waterbody to		Roman, 10 pt
NPD:	ES permittin		for the wastewate					***	Formatted: Font: (Default) Times New Roman, 10 pt
	A .			Anchorage	6.4	Fecal	Fecal Coliform	Urban	
SC	Category 4a	20401- 005	Fish Creek	Anchorage	miles	Coliform	Bacteria	Runoff	Comment [j94]: Has this permit been revised? If so, is it still in compliance with the TMDL?
	4a	005		C		Bacteria			Comment [j94]: Has this permit been revised? If so, is it still in compliance with the TMDL?
DEC bacte	4a placed Fish ria and stand	005 Creek has lard and the	been on the 1990 s	Section 303(d) ard. Based on a	list since 1 a A 1995	Bacteria 990 for non-att waterbody asse	ainment of the fecal	coliform Concluded	so, is it still in compliance with the TMDL? Comment [j95]: Who conducted the waterbody
DEC bacte	4a placed Fish oria and stand Creek was in	005 Creek has lard and the apaired onl	been on the 1990 s	Section 303(d) ard. Based on a m bacteria. DE	list since 1 a A 1995 CC develope	Bacteria 990 for non-att waterbody asse	ainment of the fecal ssment (1995), DEC	coliform Concluded	so, is it still in compliance with the TMDL?

A. Waterbody Categories 2 through 5

Category 4a Waterbodies Comment [j90]: Make sure that the narratives have consistent content such as including the original Alaska's 2010 basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in Integrated Water Quality Monitoring and Assessment Report the narrative, make sure to use the pollutant Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed. paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Alaska Water Would be great to include whether any monitoring is Reg IDArea of Quality **Pollutant** Pollutant Number Waterbody Standard scheduled in the near future. Category Location Concern Parameters Sources <u>ion</u> SCCategory 20401-**Furrow Creek** Anchorage 5.3 Fecal **Fecal Coliform** Urban 006 Coliform miles Bacteria Runoff 4a **Bacteria** DEC placed tThis waterbody waterbody placed on the 1990 Section 303(d) list for non-attainment of the fecal coliform bacteria standard based on . Based on Municipality of Anchorage water quality monitoring data that showed, the levels of fecal coliform bacteria exceed the designated use criteria for drinking water, primary contact recreation, and occasionally for secondary contact recreation. DEC presumes the The source of the fecal coliform bacteria is presumed to be humancaused from urban runoff sources. DEC developed and EPA approved aA TMDL for fecal coliform bacteria during was oped and approved by EPA in March 2004. de King Cove Seafood Waste SCCategory 30101-King Cove N/A Residues Seafood 501 Residue Processing/ 4a Waste 'placed King Cove was originally on the 1996 Section 303(d) list for residues. EPA issued a TMDL for seafood tues oon October 10, 1998 EPA completed a TMDL for King Cove and DEC the water was removed this waterbody Comment [j96]: Did EPA issue a NPDES permit -from the 1998 Section 303(d) list in 1998. DEC developed Tthe original listing based was based on historical for this waterbody? If so, include this information. rmation (including citizen complaints and photographs) provided by the Aleutians East Borough and verified by DEC info which included citizen complaints, photographs, and other information to indicate that persistent exceedances of staf seafpod residues were from seafood processing activity operating adjacent to the waterbody. The gory 4a since a TMDL was developed. SC20505-Lake Lucille Wasilla N/A Dissolved Low Dissolved Category Urban 409 Gas Runoff 4a Oxygen <u>Placed t</u>This waterbody <u>on the 1994was Section 303(d) list for <u>low</u> dissolved <u>oxygengas</u> (low DO) and nutrients in Control to the control of the cont</u> Comment [j97]: I don't believe this waterbody . DEC developed and EPA approved aA TMDL for dissolved oxygen during was completed and approved by EPA was ever listed for nutrients as AK has no WQS for nutrients. Perhaps this is one of the sources of the (March 2002 and DEC) for Lake Lucille the waterbody was removed this waterbody from the 2002 Section 303(d) list in impairment. 2002/2003. Priority actions for this water includes: complete development of TMDL implementation plan, -and-continue Comment [j98]: Is it still true that DEC is education on nonpoint source pollution controls; and work with technical team to determine WQ sampling plan to monitor planning to develop a TMDL implementation plan? nutrients and DO levels. Water quality data collected by DEC in 2004, 2005, and 2006 indicate DO levels within Alaska water quality standards ranges during open water seasons, but below water quality standards ranges during times of ice cover. 20401- \mathbf{SC} Category Little Anchorage 8.3 Fecal **Fecal Coliform** Urban 4a 017 Campbell miles Coliform Bacteria Runoff Creek Bacteria placed Little Campbell Creek on the 1990was Section 303(d) list in 1990 for non-attainment of the fecal coliform eria standard. The <u>Campbell Creek Drainage Ww</u>ater <mark>Qe</mark>uality <u>A</u>assessment <mark>for</mark> the Campbell Creek Drainage Comment [j99]: When was this assessment indicates that Little Campbell Creek is impaired only for fecal coliform bacteria. DEC developed and EPA approved aA issued? What other parameters did this assessment investigate? TMDL for feeal coliform bacteria was developed and approved by EPduring A in March 2004.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies Comment [j90]: Make sure that the narratives have consistent content such as including the original Alaska's 2010 basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant **Integrated Water Quality Monitoring and Assessment Report** Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed. paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. <u>Alaska</u> Water Reg IDArea of Quality **Pollutant** <u>Pollutant</u> Would be great to include whether any monitoring is Number Waterbody Location Standard scheduled in the near future. Category Concern Parameters Sources <u>ion</u> SCCategory 20401-Little Rabbit Anchorage 6.2 Fecal **Fecal Coliform** Urban 024 Coliform Creek miles Bacteria Runoff 4a **Bacteria** DEC placed Little Rabbit Creek was placed on the 1994 Section 303(d) list for non-attainment of the fecal coliform bacteria standard. DEC developed and EPA approved aA TMDL during for wed by EPA in March 2004. SC 20401-3.0 Little Survival **Fecal Coliform** Urban Category Anchorage Fecal 018 Coliform Bacteria miles Bacteria DEC placed Little Survival Creek was placed on the 1994 Section 303(d) list for non-attainment of the fecal coliform bacteria standard. The source of the fecal coliform bacteria exceedances has been identified as both human-caused and also non-human sources, such as wildlife. DEC developed and EPA approved aA TMDL for fecal coliform bacteria ng was developed and approved by EPA in March 2004. dur SC 20401-Fecal Coliform Category Ship Creek Glenn Fecal Urhan Anchorage 4a 020 Glenn Hwy. Hwy. Coliform **Bacteria** Runoff Bridge. Down Bridge. Bacteria to Mouth Down to Mouth DEC developed and EPA approved aA TMDL for the fecal coliform bacteria impairment on Ship Creek was developed Comment [j100]: To be consistent with other approved by EPA in March 2004. Ship Creek remains Category 5/Section 303(d) listed from petroleum product narratives under 4a, you may want to include when and why DEC placed this waterbody on the list and impairment. the source of the impairment. Do you want to include the date in which Ship Creek's petroleum SC30102-South Unalaska N/A Residues, Seafood Waste Seafood Category impairment is scheduled for a TMDL (or will be Residues, Unalaska Bay **Processing** 4a 603 Island Low addressed)? Dissolved Dissolved Gas Waste Oxygen (BOD5) DEC placed this waterbody was on the 1994 Section 303d list for both residues settleable solids and low dissolved oxygen. EPA issued the TMDLs for settleable solids and biochemical oxygen demand on February 12, 1995 and revised seafpod processing permits to implement TMDL controls. DEC The water was removed this water from the 1996 Section 303 d) list in 1996. Seafood processors discharging into South Unalaska Bay have been implementing TMDL controls. DEC and/or EPA track and monitor South Unalaska Bay are tracked and monitored by DEC and/or EPA to ensure that waterbody recovery continues and the seafood processors are fully implementing their revised permit requirements.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

<u>Reg</u> <u>ion</u>	<u>Category</u>	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	<u>Pollutant</u> <u>Parameters</u>	Pollutant Sources
SC	Category 4a	30102- 607	Udagak Bay	Unalaska Island	N/A	Residues	Settleable solids	Seafood Processing Waste

DEC placed tThis waterbody on the was listed on the 1994 Section 303(d) list for seafood waste (settleable solids) in 1994. A near shore floating pollock processor has discharged seafood waste into Udagak Bay. Due to the poor flushing action in Udagak Bay, two piles of fish waste have accumulated at the bottom of the bay. This resulted in a violation of the water quality standards since the seafood general NPDES permit issued in 1989 did not provide for a zone of deposit. EPA took eEnforcement action has been taken against the same seafood processors for waste that had accumulated on the shoreline, and for floating solids on the receiving water. At present, tThere is one floating seafood processor discharging to this water body. The seafood waste residues (waste pile) are decreasing due to better utilization of the fish product. EPA issued aA total maximum daily load (TMDL) was completed for settleable solid residues in Udagak Bay on September 30, 1998 and DEC waterbody was-removed the waterbody from the 1998 Section 303(d) list in 1998.

SC	Category	20401-	University	Anchorage	10	Fecal	Fecal Coliform	Urban
	4a	419	Lake		acres	Coliform	Bacteria	Runoff
i						Racteria		

DEC placed this Unwaterbody iversity Lake has been on the 1990 Section 303(d) list since 1990 for non-attainment of the fecal coliform bacteria standard. DEC determined that the waterbody was impaired for only fecal coliform bacteria based on The the Chester Creek Drainage Water Quality Assessment, which includeds University Lake (1993), completed in April 1993, determined that the waterbody was impaired for only fecal coliform bacteria. A TMDL for fecal coliform bacteria was developed and approved by EPA during (dated May 2005).

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

Comment [j101]: Was this waterbody ever on the list for other impairments? The description implies it had been on the list for numerous impairments. If not, then I'd recommend rewording the statement on the assessment to state "DEC confirmed that the waterbody was impaired for FC based on the" This comment holds true for the other waterbodies addressed in the Chester Creek assessment such as Chester Creek Westchester

Comment [j102]: Who conducted the

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

<u>Reg</u> <u>ion</u>	<u>Category</u>	Alaska ID Number	<u>Waterbody</u>	Location	Area of Concern	<u>Water</u> <u>Quality</u> <u>Standard</u>	Pollutant Parameters	Pollutant Sources
SC	Category 4a	20401- 421	Westchester Lagoon	Anchorage	30 acres	Fecal Coliform Bacteria	Fecal Coliform Bacteria	Urban Runoff

DEC placed Westchester Lagoon on the 1990was Section 303(d) listed in 1990 for non-attainment of the fecal coliform bacteria standard. DEC determined that Westchester Lagoon was impaired only for fecal coliform bacteria based on tThe Chester Creek Drainage Water Quality Assessment, which also included Westchester Lagoon), (from April 1993). indicated Westchester Lagoon was impaired only for fecal coliform bacteria. DEC developed and EPA approved a TMDL for fecal coliform bacteria was developed and approved by EPA-during (dated May 2005).

SE	Category 4a	10301- 005	Duck Creek	Juneau	N/A	Dissolved Gas Residues Toxic & Other Deleterious Organic and Inorganic Substances Fecal Coliform Bacteria Turbidity	Low Dissolved Oxygen, Debris, Iron, Fecal Coliform Bacteria, and Turbidity	Urban Runoff, Landfill, Road Runoff, Land Development
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placed Duck Creek was on the 1994 Section 303(d) listed for dissolved gas [low dissolved oxygen (DO)], residues (debris), ironmetals, fecal coliform bacteria, and turbidity in 1994. TMDLs were completed for all pollutants (turbidity in 1999, fecal coliform bacteria and debrisresidues in 2000, and iron to address both the dissolved oxygen and iron impairments in 2001) and DEC removed Duck Creek was removed from the 2002 Section 303(d) list and placed in Category 4a in 2002/2003. Priority actions identified for this water include: implement the Duck Creek Management Plan and actions to address loadings identified in TMDLs; conduct monitoring program to determine if recovery actions are improving water quality; maintain stream flow to provide fish rearing habitat in the stream, dilute pollutants, and prevent salt water intrusion; and work with City and Borough of Juneau and others to ensure adequate stormwater permitting practices and controls are implemented to restore water quality. A 2007 final monitoring report found that Duck Creek continues to suffer from low in-stream flow, except for during large precipitation events; dissolved oxygen levels continue to regularly fall below state standards for aquatic life; pH values were centered near and at times below the state water quality standard of 6.5 for aquatic life, at least during the morning sampling events conducted for this study (variations in pH are expected based on time of day and amount of sunlight); large amounts of iron floc were noted at all sites (cite the name of report, 2007). Stream clean up events are conducted on a bi-yearly basis to address on-going residues (debris) issues in high density corridors. The construction of wetland habitat and channelization of the stream above Nancy Street has demonstrated some improvement to fish and wildlife habitat, reduced turbidity and iron levels, and raise pH and DO in the downstream reach. However, on-going land use, ordinance enforcement, and snow disposal in private lands adjacent to Duck Creek continue to impair water quality. (cite name and date of of report documenting these results .

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

Comment [j103]: Cite the name of the monitoring report with date in paratheses so reader can locate report.

Comment [j104]: Who conducts these actions?

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

L					U	,			
	<u>Reg</u> <u>ion</u>	<u>Category</u>	<u>Alaska</u> <u>ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
	SE	Category 4a	10203- 005	Granite Creek	Sitka	N/A	Turbidity Sediment	Turbidity, Sediment	Gravel Mining

DEC placed Granite Creek was placed on the 1996 Section 303(d) list for turbidity and sediment. Information showed that the lower 1.5 miles of the creek wais impaired from sediment and turbidity. Since DEC developed a TMDL and EPA approved the TMDL was completed for total suspended solids to address both impairments in Granite Creek and approved by EPA(, dated September 30 2002), DECit was removed this waterbody from the 2002 Section 303(d) list-and moved to Category 4a in 2002/2003. City and Borough of Sitka (CBS) is Priority actions for this water includes: managing the effort to implement actions identified in the Granite Creek TMDL Watershed Recovery Strategy and Action Plan (plan) developed in (March 2002), CBS has monitored Granite Creek has been monitored for turbidity and total suspended sediment (TSS) as part of the TMDL Implementation the pPlan through ACWA grants for the past 3 years or so. The turbidity in Granite Creek has improved significantly since implementing BMP controls at the gravel mining operations, establishing and enforcing a stream setback, re-contouring the road __and creating vegetated ditches and also stopping operations if there is a certain amount of rain in a set time period. The City and Borough of Sitka is doing a good job keepsing on top of new developments in the area too-to make sure they are in compliance with the TMDL.

SE	Category 4a	10203- 603	Herring Cove of Silver Bay	Sitka	102 acres	Residues	Bark & Woody Debris	Log Storage from former
			-					Pulp Mill
								Operations

DEC placed tThe Herring Cove segment of Silver Bay on the 1994 has been-Section 303(d) list for bark and woody debrised since 1994. On September 27, 1999, EPA completed a TMDL was completed for bark and woody debrisersidues for this segment of Silver Bay. DEC removed tThe Herring Cove segment of Silver Bay was removed from the 2002 Section 303(d) list in 2002/2003.

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

Comment [j105]: What information? Cite the name and date of the report.

Comment [j106]: Since you don't include how restoration was funded in previous narrative, I would suggest deleting the funding source from this narrative.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

Reg ion	<u>Category</u>	<u>Alaska</u> <u>ID</u> <u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Area of Concern	<u>Water</u> <u>Quality</u> <u>Standard</u>	Pollutant Parameters	Pollutant Sources
SE	Category 4a	10301- 004	Jordan Creek	Juneau	3 miles from tide- water up- stream	Residues	Debris	Land Development, Road Runoff

A TMDL was developed and approved by EPA for residues on Jordan Creek and is dated May 2005. Since Jordan Creek has an approved TMDL for residues Jordan Creek was removed from the Section 303(d) and moved to Category 4a for residues. A TMDL for sediment and dissolved gas was completed in 2009. Jordan Creek is moved to Category 4a in 2010.

SE	Category	10301-	Jordan Creek	Juneau	3 miles	Sediment,	Sediment, Low	Land
	4a	004			from	Dissolved	Dissolved	Development,
					tide-	Gas ₂	Oxygen, Debris	Road Runoff
					water	Residues		
					up-			
					stream			

developed and EPA approved aA TMDL on this waterbody was developed and approved by EPA for debrisresidues Creek during and is dated May 2005 and a TMDL for interstitial dissolved oxygen to address the low -A nd TMDL was developed and approved by EPA for dDissolved oxygen gas and sediment impairments during in October 2009. DEC removed Since Jordan Creek from the 2006 Section 303(d) list for debris impairment and from the Section 303(d) list for has an approved TMDL for residues, dissolved oxygengas, and sediment impairments, Jordan k was removed from the Section 303(d) and moved to Category 4a for residues. Populations of Coho salmon have dropped from an average of 250 adult returns to 54 in 1996 and 18 in 1997. Jordan Creek had been It was one of the most productive small streams in Juneau and Southeast Alaska for coho salmon but has experienced a rapid decline. Populations of Coho salmon have dropped from an average of 250 adult returns to 54 in 1996 and 18 in 1997. The stream corridor is under rapid development and the lower section of the creek regularly goes dry. Macroinvertebrate bioassessment sampling shows the stream has low diversity and experienced declines over the 1994 to 1996 period. There are serious sediment problems in the stream with poor survival of salmon eggs and low oxygen readings in the substrate that are in violatedion of water quality standards. The stream is largely spring fed and cannot transport large volumes of sediment like higher gradient systems. The headwaters of the stream are manipulated with ditches replacing more productive habitat and filling in-with ponds filled in. More recent observations note a problem with iron floc that was not present 10 years ago; however there is no hard iron data that might document iron exceedances. The stream corridor is r rapid development and the lower section of the creek regularly goes dry. Macroinvertebrate bioassessment sampling shows the stream has low diversity and experienced declines over the 1994 to 1996 period. A suite of water quality parameters and pollutants including sediment, pH, dissolved oxygen, and turbidity were sampled between November 2007 and June 2008. Findings are summarized in the report: "Watershed Protection and Recovery for Jordan Creek, Juneau, AK" (Nagorski, Hood, Hoferkamp, Neal & Hudson, July 2008). Bi-yearly "Slash the Trash" clean up events continue to take place and two Stormwater BMPs demonstration sites were installed in 2009 in areas adjacent to the stream to provide information and education to the general public.

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

Comment [JC107]: Who made these observations?

Comment [JC108]: Who did the sampling, organize the clean-up events and installed the SW RMPs?

Comment [JC109]: Is education to the public the only purpose of the SW BMPs? I suspect the BMPs serve other purposes....

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies – Impaired but not needing a TMDL; TMDL has been completed.

			_					
Reg ion	<u>Category</u>	Alaska ID Number	<u>Waterbody</u>	Location	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
SE	Category 4a	10203- 602	Klag Bay	West Chichagof Island	1.25 acres	Toxic & Other Deleterious Organic and Inorganic Substances	Metals – Arsenic, Cobalt, Copper, Lead, Manganese, Mercury, Silver, Zinc	Mining

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies – Impaired but not needing a TMDL; TMDL has been completed.

		<u>Alaska</u>				<u>Water</u>		
Reg		<u>ID</u>			Area of	Quality	<u>Pollutant</u>	<u>Pollutant</u>
ion	Category	Number	<u>Waterbody</u>	Location	Concern	<u>Standard</u>	<u>Parameters</u>	Sources

Klag Bay was placed on the 1996 Section 303(d) list for non-attainment of the metals (arsenic, cobalt, copper, lead, manganese mercury, silver, zinc)toxic & other deleterious organic and inorganic substances standard for metals. Past mining resulted in the deposition of large amounts of tailings in Klag Bay. A draft 1985 report (not finalized to date) on Klag Bay titled "Klag Bay Study" prepared by the U.S. Fish and Wildlife Service indicated high levels of mercury, arsenic, cobalt, copper, and lead, silver metals from tailings which are leaching into the bay. Contaminants are mercury, arsenic, cobalt, copper, and lead, silver. These metals caused abnormalities in numerous blue mussels which indicate. These abnormalities are considered an impairment of a designated use. A 1998 preliminary assessment confirmed lead, silver, arsenic and mercury in the intertidal sediments above NOAA screening benchmarks. DEC developed and EPA approved TMDLs for mercury, copper, lead, silver, zinc, arsenic, marganese, and cobalt which addressed the sediment toxicity impairments—was developed and approved by EPA on June 1, 2009 for the metals impairments.

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

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Comment [j110]: Cite the study name and author.

author.

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A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

Reg ion	Category	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
SE	Category 4a	10301- 001	Lemon Creek	Juneau	N/A	Turbidity Sediment	Turbidity, Sediment	Urban Runoff, Gravel Mining

placed this waterbody was ed on the 1990 Section 303(d) list for turbidity and sediment (; for labitat modification). DEC prepared and EPA approved aA waterbody recovery plan that included a TMDL was ared and approved for this waterbody-for total suspended solids and settleable solids to address all of the impairments e Fall of 1995. DEC removed and Lemon Creek removed from the 1996 Section 303(d) list in 1996. Waterbody recovery plan implementation began during Fall 1995. The University of Alaska-Southeast (UAS) conducted has secured grant funds for a sediment assessment to. This assessment will defined natural nonpoint source sediment concentrations within Lemon Creek, where active glacial processes contribute to sediment problems. UAS used aA paired watershed study was conducted from May 2002 through June 2003 to determine ascertain the roles of glacier processes on watershed sediment discharge. This study concluded that in systems substantially influenced by glacier and mass wasting processes, the traditional TSS-Q (total suspended sediment-stream discharge) relationship is not particularly meaningful because some of the most pronounced sediment events are associated with processes that are not well correlated with stream discharge. Analysis of the collected data is continuing in order to provide additional insights into the erosion process Lemon and Gold Creeks. With this information, more realistic expectations and best management practices can be used for evaluating human-caused sediment in Lemon Creek. This project's results will also assist with flood control and bank stabilization projects proposed for Lemon Creek. Another Other priority actions for this water is to include: implement rol actions and monitoring as recommended in TMDL document; and form a joint interagency-landowner group to mine implementation of TMDL monitoring and control measures.

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

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A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

Reg ion	Category	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
SE	Category 4a	10301- 014	Pederson Hill Creek	Juneau	Lower two miles	Fecal Coliform Bacteria	Fecal Coliform Bacteria	Septic Tanks

DEC placed Pederson Hill Creek on the 1990was Section 303(d) listed in 1990 for non-attainment of the fecal coliform bacteria standard infrom certain areas of the creek as a result of failing on-site septic systems. Fecal coliform bacteria contamination was well documented since 1985, with values as high as 2400 FC/100 ml reported in 1991. Monitoring was conducted from November, 2005-summer of 2006 and found that fecal coliform bacteria levels continue to exceed water quality standards at least on some sites during parts of the year. DEC established and EPA approved a TMDL Pederson Hill Creek has a completed and final TMDL for fecal coliform bacteria duringdated February 2009.

SE	Category	10203-	Silver Bay	Sitka	6.5	Residues	Pulp Residues,	Industrial,
	4a	601			acres	Toxic &	Logs, Bark &	Historical
						Other	Woody Debris,	Pulp Mill
						Deleterious	Sediment	Activity
						Organic	Toxicity due to	
						and	Wood	
						Inorganic	Decomposition	
						Substances	By-products	
1		ı		1	1		I	

DEC placed Silver Bay on the 1994was Section 303(d) listed in 1994 for non-attainment of the residues, toxic & other deleterious organic and inorganic substances, and dissolved gas standards for sludge (residues), toxic substances, and dissolved gas (dissolved oxygen (DO)). A report titled Final Expanded Site Inspection Report, Alaska Pulp Corporation, Sitka, Alaska, Feb. 1995 substantiated water quality exceedances. Discharges from the mill ceased in March 1993. Based on a June 1993 Water Quality Assessment, DEC determined that the pollutant parameters of concern wereas sludge and dissolved oxygen. A contaminated site Remedial Investigation/Feasibility Study for Silver Bay was contracted by Alaska Pulp Company from July 1996 to February 1999. DEC issued a Record of Decision in 1999. The remedial action objective identified by the ROD was natural recovery, with long-term monitoring. A TMDL was developed for Silver Bay in 2003, with waste load allocations for residues and sediment toxicity. Monitoring data show that Silver Bay is no longer impaired for dissolved oxygen (DO). Although DO levels below the limits of the WQS have been observed in deep water between Sawmill Cove and Herring Cove, there appears to be no correlation between these levels and the presence of wood waste, and no current source of DO depression is known. Therefore, the DO pollutant parameter was removed from the Silver Bay listing and no TMDL will be developed for DO. In 1999 a TMDL was completed for residues for the Herring Cove segment of Silver Bay. A TMDL for residues and sediment toxicity was completed in 2003. Based in the 2003 TMDL, Silver Bay was removed from the Section 303(d) list and placed in Category 4a of the Integrated Report.

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

Comment [JC111]: Cite the source of the 1985 documentation and of the 1991 report.

Comment [JC112]: Who conducted the monitoring?

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Comment [JC113]: Who was the author?

Comment [JC114]: Include the official title of the report and author.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

Reg ion	Category	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
SE	Category 4a	10103- 602	Thorne Bay	Prince of Wales Island	7.5 acres	Residues	Bark & Wood Debris	Historical Log Transfer Facility

DEC placed tThe Thorne Bay hi (LTF), which consisted of both a near shore log transfer area and an associated log storage area (LSA), on the 1994was Section 303(d) listed in 1994 for non-attainment of the residues standard for bark and wood debris. Log transfer and storage activities began in 1962 and caused the accumulation of woody debris on the bottom of the head of Thorne Bay. Log transfer and storage activities ended in 2000 and the operator, the U.S. Forest Service (USFS,), has maintains no plan to resume them; USFS removed all equipment and facilities have been removed. A key feature of the recovery of the former log transfer and storage area is the Thorne River which empties into the bay and deposits sediments onto a large sand and gravel delta where they mix with debris and aid in biological recovery. The Log Storage Area: Dive surveys of the LSA conducted in July 2001 and June 2002 documented 1.1 acres of bark and wood debris on the marine bottom. Dive surveys in 2003 and 2005 detailed the benthic health of 161 acres of the former LSA. Findings include finding: 1) bark debris is mostly decomposed to small fragments and is mixed with natural sediments; 2) the bottom has is biologically recovered and rexhibitsing mostly mature "Stage III" biological communities; and 3) the site is an "extremely healthy coastal embayment." DEC determined, based on the detailed benthic assessment, the residues standard is met in the former LSA and removed it from the 2004 Section 303(d) list and placed it in Category 2 in 2004. As of the 2008 Integrated Report the LSA remains in Category 2 with no known rments. The Log Transfer Facility: Dive surveys conducted in 1988 and 1990 documented approximately 55 acres. of bark accumulation around in the LTF. Dive surveys of the LTF conducted in July 2001 and June 2002 documented 2.6 and 1.1 acres, respectively, of bark and wood debris on the marine bottom. An April 2004 dive survey of the LTF documented 6.5 acres of bark and woody debris. The former LTF remained on the Section 303(d) list for a defined area of approximately 35 acres between the LTF shoreline and the boundary of the former log storage area established in the 2003-2005 benthic assessment. A December 2007 dive survey documented a reduced area of impaired marine bottom of only 7.5 acres and the rest of the previous area of impairment as meeting the residues criterion and attaining water quality standards. This suggests that biological recovery is proceeding quickly and is well advanced within the area associated with the LTF. <u>DEC developed and EPA approved aA</u> residues TMDL for the Thorne Bay LTF was completed and oved by EPA on May 8, 2007 and DEC removed this portion of the Bay. With the completed TMDL, the LTF is removed from the 2008 Section 303(d) list and placed in Category 4a in 2008 an approved TMDL for residues.

SE	Category 4a	10301- 017	Vanderbilt Creek	Juneau	N/A	Turbidity Residues Sediment	Turbidity, Debris, Sediment	Urban Runoff
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DEC placed tThis waterbody was placed on the 1990 Section 303(d) list for turbidity, debris, and sediment, and with concerns for habitat modification. There is insufficient information in the file to correlate habitat modification with effects to designated uses. DEC prepared aA waterbody recovery plan that included a TMDL to address the impairments and was prepared during Summer 1995. EPA approved the TMDL on September 27, 1995. DEC removed and Vanderbilt Creek removed from the 1996 Section 303(d) list in 1996. The Juneau Watershed Partnership began implementing the Implementation of the waterbody recovery plan began during the Fall 1995. The partnership improved public education and stream stewardship through Stream Cleanup Day and a youth group removed debris. A local nonprofit group has secured grant funds to remove debris from Vanderbilt Creek using a youth group. The project will also improve public education and stream stewardship through promotion and implementation of a Stream Cleanup Day. Priority actions for this water includes: implement control actions and monitoring as recommended in TMDL document. The Juneau Watershed Partnership has received ACWA grant funds to plans to complete the following in 2007: evaluate actions and update recovery plan, develop a water quality monitoring strategy, and a stream clean up.

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

Comment [JC115]: You put a water not a facility on the list.

Comment [JC116]: Who conducted the dive surveys? Use active voice if possible.

Comment [JC117]: TMDLs are developed for waters not facilities

Comment [JC118]: Who conducted the public education campaign including

Comment [JC119]: Who conducted the public education campaign including

Comment [JC120]: Did the Partnership update the recovery plan and monitoring strategy? They received funds to complete these tasks three years ago.

A. Waterbody Categories 2 through 5

Category 4a Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4a Waterbodies - Impaired but not needing a TMDL; TMDL has been completed.

Reg ion	Category	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
SE	Category 4a	10102- 601	Ward Cove	Ketchikan	250 acres	Residues Dissolved Gas	Pulp Residues, Logs, Bark & Woody Debris, Low Dissolved Oxygen	Industrial

DEC placed Ward Cove on the 1990has been Section 303(d) listed since 1990. The waterbody was listed for nonattainment of the residues and dissolved gas standards forrom pulp residues, logs, bark and woody debris, and low dissolved oxygen (DO) as a result of from historical discharges and associated activity from the Ketchikan Pulp Company pulp mill operations. EPA established a surface dissolved oxygen TMDL for Ward Cove on May 5, 1994 while the pulp mill was still discharging. Since discharges have ceased, surface water DO has been meeting water quality standards; ever, Ward Cove remained on the Section 303(d) list for non-attainment of the dissolved gas standard for DO below inocline (at depth, i.e., for deeper waters). Since the pulp mill wastewater discharge the red from the listing. Studies indicated that bottom sediments and accumulations of wood debris contribute to seasonal depressions in dissolved oxygen in Ward Cove. Discharge monitoring reports (DMRs) as required by timber processing discharge permits from 1995 to 2000) showed severe dissolved oxygen depressions at certain times and locations during stratification of the waterbody in late summer and fall. The waters below the pinoclinedeeper layer of r more than 5 to 10 meters was below Alaska water quality criteria for dissolved oxygen. This is further evidence of an ongoing dissolved oxygen deficit in Ward Cove. The seafood processing facility, which had contributed to DO deplessions, has ceased discharging and no new sources or residues from this source are present. A surface dissolved en TMDL for Ward Cove was issued by EPA on May 5, 1994 while the pulp mill was still discharging. Since larges have ceased surface water DO has been meeting water quality standards for quite some time but Ward Cove ins Category 5/Section 303(d) listed for non-attainment of the dissolved gas standard for DO below the pinocline (at n, i.e., for deeper waters). The toxicity in Ward Cove was more closely reviewed and more accurately described as ment toxicity" from pulp residues, logs, and bark and woody debris operations. An 80 acre area of concern was ved and final Record of Decision of the Superfund clean-up for the "Ketchikan Pulp Co ne Operable Unit, Ketchikan, Alaska" (March 29, 2000) are adequate "other pollution controls" for sediment toxicity ard Cove. Three acres have been dredged in the "area of concern" in addition to thin capping of approximately 30 of the marine bottom. DEC established and EPA approved a A TMDL to address the for residues and dissolved oxygen impairment on was developed and approved by EPA on May 15, 2007. Consequently, DEC placed Ward Cove is ed in Category 4a for residues and DOdissolved gas (DO) in the 2008 Integrated Report.

Comment [j90]: Make sure that the narratives have consistent content such as including the original basis for the listing, priority actions for restoration, etc. When describing the impairment and TMDLs in the narrative, make sure to use the pollutant paramters rather than the WQS. Would be great to consistently include planned or recommended restoration actions such as done on Duck Creek. Would be great to include whether any monitoring is scheduled in the near future.

A. Waterbody Categories 2 through 5

Category 4b Waterbodies Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4b Waterbodies - Impaired but not needing a TMDL; expected to meet standards in a reasonable time period.

Reg ion	Category	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
IN	Category 4b	40501-001	Cabin Creek	Nabesna	1.5 miles	Toxic & Other Deleterious Organic and Inorganic Substances	Manganese, Arsenic, Iron, Copper & Cadmium	Mining

DEC placed this waterbody was on the 1996 -Section 303(d) listed in 1996 for manganese from the Nabesna Mine site - a patented mining claim area located within the Wrangell St. Elias National Preserve. The U.S. Geological Survey (USGS) and National Park Service (NPS) completed the field sampling component of an environmental geochemical site characterization study at the Nabesna Mine in 1997 (results published in USGS PP 1619). NPSational Park Service and DEC staff visited the mine site and waterbody in June 1997 to discuss specifics of a waterbody recovery plan with the owner of the Nabesna Mine property. Acidic mill tailings located below the mill site (and situated on private and NPSational Park Service managed lands), compromise the water quality of Cabin Creek.

Elevated metal levels were detected periodically in the Cabin Creek drainage within the one mile reach below the tailings. Recover plan objectives include re-construction of the existing historic drainage ditches around the tailings to divert stormwater and seasona metal levels? snow melt run-off away from (bypass) the tailings and capping the tailings if suitable material is available on site. NPSThe Park Service contracted the development of an Approval Memorandum (February 2000), a Final Engineering Evaluation/Cost Analysis (November 2000), and the development of a Draft Surface Water Flow Mitigation Plan for the Nabesna Mine Tailings. As a result of findings from these reports, DEC added In 2002/2003 arsenic, iron, copper and cadmium to the 2002 Section 303(d) for this waterbody, were added to the listing. The NPS implemented the Draft Surface Water Flow Mitigation Plan in the field season of 2004 and re-directed surface water flows away from the tailings to minimize introduction of metals into Cabin Creek. Visual observations by the NPS indicate that

the water flow mitigation work has intercepted 80% of the water that previously flowed across the tailings. Water quality monitorin Comment [JC122]: Who conducted the was conducted during spring run-off in May 2007. The volume of water flowing across the tailings was substantially diminished wil monitoring resulted in lower volumes of water carrying dissolved metals. Additional water quality sampling is planned in 2008 to validate the effectiveness of the on-the ground controls. DEC removed Cabin Creek meets the Category 4b criteria and was removed from ory 5-(Section 303(d) list) in 2004 based on "other pollution controls. A Category 4b rationale has been developed and on record and available upon request. Additional water quality sampling is planned in 2008 to validate the effectiveness of the on-the Comment [JC123]: Did this monitoring occur?

ground- controls.

SC	Category	N/A	Exxon Valdez	Prince	23	Petroleum	Petroleum	Exxon Valdez
	4b		Beaches	William	beaches	Hydrocar-	Products	Crude Oil
				Sound -		bons, Oil &		Spill
				Alaska		Grease		
				Peninsula				

A. Waterbody Categories 2 through 5

Category 4b Waterbodies Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4b Waterbodies - Impaired but not needing a TMDL; expected to meet standards in a reasonable time period.

						<u>Water</u>		
Reg		Alaska ID			Area of	Quality	<u>Pollutant</u>	<u>Pollutant</u>
<u>ion</u>	<u>Category</u>	<u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Concern	<u>Standard</u>	<u>Parameters</u>	<u>Sources</u>

DEC place| Exxon Valdez Beaches on the 1990were-Section 303(d) listed as impaired in 1990. The 23 Exxon Valdez affected beaches and adjacent marine waters were later placed in Category 4b because it was believed that a TMDL process would duplicate efforts of the Exxon Valdez Trustee Council and restoration projects specified in the Exxon Valdez Restoration Plan. Among the projects funded by the council is a project which will refine the area where oil remains. The project, Assessment of the Areal Distribution and Amount of Lingering Oil in Prince William Sound and the Gulf of Alaska (conducted by Short et al) will produce maps showing the probability of lingering oil. A second project funded, Factors Responsible for Limiting the Degradation Rate of Exxon Valdez Oil in Prince William Sound Beaches-Submitted under the BAA, should provide an overall understanding of the fate and transport and provide guidance as to how to accelerate the disappearance of lingering oil present in the subsurface (conducted by Boufadel). This combination of work will assist DEC to more clearly identify the nonpoint source loadings that still occur and to continue to ensure the Council works toward meeting water quality standards. [The Assessment of the Areal Distribution and Amount of Lingering Oil report will be completed in 2009; the Factors Responsible for Limiting the Degradation Rate of Exxon Valdez Oil study will be completed in 2010. The results Comment [JC124]: Was this report completed?

from the second report should provide a roadmap for identifying when water quality standards may be met. A Category 4b rationale has been developed and on record and available upon request. Consequently, the Exxon Valdez beaches have been placed in Category 4b

SE	Category	10203-808	East Port	NE	0.4	Residues	Bark &	Log transfer
	4b		Frederick	Chichagof	acres		Woody Debris	facility
				Taland				

DEC placed East Port Frederick on the was Section 303(d) listed for non-attainment of the residues standard for bark and woody debris. Diverside the survey information documents a significant exceedance of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertidal threshold bark accumulation level (as per the ATTF Log Transcription of the interim intertion level (as per

A. Waterbody Categories 2 through 5

Category 4b Waterbodies Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 4b Waterbodies - Impaired but not needing a TMDL; expected to meet standards in a reasonable time period.

<u>Re</u>	-	<u>Category</u>	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
S	SE	Category 4b	10103-031	Fubar Creek	Prince of Wales Island	N/A	Sediment	Sediment	Timber Harvest

In 1993, the Fubar Creek watershed, located on federal National Forest lands, experienced multiple landslides during heavy rain. This erosion, due to timber harvests in previous years, added more sediment to the creek than could be washed downstream. This large influx of sediment negatively impacted the ability of the creek to sustain anadromous fish populations...... DEC did not place this The

waterbody in the 1996 Section 303(D) list due to was placed in "other pollution controls." Category 4b in 1996. No significant commercial harvest activity has occurred within the watershed since the US Forest Service (USFS) deferred the timber harvest in 1 an integrated report or a Category 4.

and the Fubar Creek watershed was not considered for entry during the next 10 year timber sale planning cycle. In 2003, the USFS completed A comprehensive hydrologic condition assessment of the Harris River Basin which included this watershed was completed in 2003. It included a road condition survey that identified 1.2 miles of old logging road that were placed in storage in 2006. USFS conducted Channel condition monitoring was conducted for a number of years in Fubar Creek. Monitoring assessed trends in geomorphic indicators to determine progress toward channel equilibrium. The watershed-based assessment and the Channel condition monitoring helped to guide and prioritize restoration activities in the Fubar Creek sub-watershed. The Craig Ranger District of USFS has actively restored vegetation to stabilize landslide areas and the modified the structure and function of riparian timber stands to prevent further sediment input. In 2006 and 2007 the USFS restored ~5500 feet of creek by removing large quantities of sediment from the creek bed, reconstructing the channel, and reestablishing large wood jams and pools to enhance anadromous fish habitat and spawning. Completion of the 2006 work allowed the first perennial flows under the highway bridge in the 13 years since the 1993 landslides. The last phase of active restoration will be replacement of the flood plain overflow culverts on the Hydaburg Highway in summer 2008. Monitoring of restoration efforts to restore the anadromous fish habitat included measurement of pool and channel morphology, smolt counts, and observations of adult spawning activity in the restored channel. USFS published aA summary of the Comment [JC127]: Did the last phase of the restoration effort and monitoring results-were published in 2008. DEC developed aAc-Category 4b rationale which is has been developed and on record and available upon request.

Comment [JC126]: In 1996, DEC did not have

restoration and monitoring occur as scheduled in 2008?

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	<u>Alaska ID</u> Number	Waterbody	Location	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollui</u> Soure	Comment [j128]: Some listings, especially new
ton.	Curegory	runoer	waterbouy	Locuiton	Concern	<u> Standard</u>	1 drameters	Sourc	
IN	Category 5 Section 303(d)	40506-007	Chena River	Fairbanks	15 miles	Sediment	Sediment	Uı Rı	ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source— Kushkokwim River).
	listed								Comment [j129]: Some listings, especially new ones, are not including this information (see Salt
				Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk					

d. Data results have shown that the Chena River met water quality standards for the petroleum hydrocarbon standard. It source—Kushkokwim River). currently revie wing dData are currently being reviewed forpertaining to the the sediment impairmentstandard, and Chena River remains

IN	Category	40506-002	Chena Slough	Fairbanks	13 miles	Sediment	Sediment	Urban
	5 Section							Runoff
	303(d)							
	listed							

DEC placed Chena Slough on the 1994was Section 303(d) listed in 1994 for non-attainment of the petroleum hydrocarbons, oil and grease and sediment standards based on i. Information contained presented in the 1994 Statewide Water Quality Assessment survey (1994) and indicated that a petroleum problem existed and is affecting water quality. DEC staff's best professional judgment. File a dicates Nnonpoint source problems result from the surface water run-off, road construction, site clearing, and de-watering activities from gravel operations. Based on best professional judgment of DEC staff the conducted water quality testing in 2005, 2007 and 2009. Data have shown that the Chena Slough met water quality standards for the petroleum hydrocarbon standard. DEC is currently reviewing data pertaining to the sediment impairment. Data are currently being reviewed for the sediment standard, however Chena Slough remains Section 303(d) listed for sediment.

IN	Category 5 Section	40402-010	Crooked Creek	North of Fairbanks	77 miles	Turbidity	Turbidity	Placer Mining
	5 Section		Creek	Fairbanks				Milling
	303(d)		Bonanza					
	listed		Crooked					
			Deadwood					
			Ketchem					
			Mammoth					
			Mastodon					
			Porcupine					

DEC placed Grooked Creek watershed on the 1992 was Section 303(d) listed in 1992 for non-attainment of the turbidity standards. At Comment [j130]: Who conducted this nent was completed in August 1995. Monitoring conducted in the early 90's documented major improvements in water A water quality assessment was completed in August 1995. The assessment called for the development of a waterbody recovery plan t assessment restore and maintain habitat quality however, to date, such a plan has not been developed. The DEC is currently preparing a monitorin Comment [j131]: Whop conducted the sampling plan for use in 2011 and 2012. The monitoring data will provide current data that will determine whether a TMDL is needed monitoring

Comment [j132]: Who conducted this assessment? Include title and author of the

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	<u>Category</u>	<u>Alaska ID</u> <u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	<u>Pollutant</u> <u>Parameters</u>	<u>Pollur</u> <u>Soure</u>	$\overline{}$			
IN	Category 5 Section 303(d)	40509-001	Goldstream Creek	Fairbanks	70 miles	Turbidity	Turbidity	PI Mi	C			
	listed								C			
DEC	DEC placed Goldstream Creek on the 1992 was Section 303(d) listed in 1992 for non-attainment of the turbidity standard. A waterbod											

assessment was completed that confirmed the pollutant and pollutant source. This assessment determined that existing controls were dress the turbidity issue and that a formal TMDL was not needed. Nevertheless, the water quality assessment was prep to EPA for technical review for Goldstream Creek (dated September 30, 1994) that contains The assessment contained Comment [j133]: Who conducted this and submitte Management Plan Development section (Appendix E) and a Pollution Control Strategy in the assessment. No further determination ha assessment? Include title, date and author of the te the 1996 Section 303(d) listing. DEC plans to conduct Continued monitoring during 2010 is needed to ether this waterbody is still impaired and to ensure that existing controls are making progress towards attaining water que assessment report. standards. DEC prepared aA monitoring and sampling plan was prepared in 2009-and will be implemented in 2010.

Comment [j128]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Little usitna River-also missing pollutant source-Kushkokwim River).

Comment [j129]: Some listings, especially new nes, are not including this information (see Salt huck Bay, Kendrick Creek, Coffman Cove, Illiuiuk Harbor, Little Susitna River-also missing pollutant source-Kushkokwim River)..

assessment. DEC makes and EPA approves a determination that a TMDL is not needed, not an

IN	Category	Kuskokwim	1,000 feet,	Toxic & Other	Metals –	Mining
	5 Section	River	900	Deleterious	antimony,	
	303(d)		downriver	Organic and	arsenic, mercury	
	listed		and 100 feet	Inorganic		
			upriver	Substances		
			from the			
			mouth of			
			Red Devil			
			Creek			

DEC placed Kuskokwim River is placed on the 2010 Section 303(d) list of impaired waters for non-attainment of the toxic and other deleterious organic and inorganic substances standard for antimony, arsenic, and mercury. Sampling and data collected in 1971, 1979; Comment [j134]: Who conducted the sampling? and 1999 have documented exceedances for the metals antimony, arsenic, and mercury. The Red Devil mine site, a pollutant source, leading to this impairment is under consideration for the Superfund's National Priorities List.

Any monitoring scheduled in the near future? If so, please add this information.

IN	Category	40506-003	Noyes Slough	Fairbanks	7 miles	Sediment,	Sediment,	Urban
	5 Section					Petroleum	Petroleum	Runoff
	303(d)					Hydrocarbons,	Products	
	listed					Oil & Grease		
						Residues		

DEC placed Noyes Slough on the 1994has been on the Section 303(d) list for non-attainment of the sediment, petroleum hydrocarbons, oil and grease, and residues standards for sediment, petroleum products, and debris since 1994. DEC established and EPA approved a debris TMDL to address the residues impairment in 2008. Numerous water quality violations have been reported. These violations are a result of I into the slough. DEC completed a debris assessment in 2007; this data was used to complete a TMDL for residues in 2008. DEC collected w.Water quality data collected in 2005, 2007 and 2009 and is eurrently being reviewing the data results to ed to determine if a raterbody is still impaired for sediment and petroleum products TMDL is necessary for the oil and grease and hydrocarbon whether this v impairments.

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

	<u>Reg</u> <u>ion</u>	<u>Category</u>	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Poli</u> Sou	_	(
•	IN	Category 5 Section 303(d) listed		Red Devil Creek	Red Devil	0.5 mile of creek	Toxic & Other Deleterious Organic and Inorganic Substances	Metals – antimony, arsenic, mercury	I	na N	1

DEC placed Red Devil Creek is placed on the 2010 Section 303(d) list of impaired waters for non-attainment of the toxic and other deleterious organic and inorganic substances standard for antimony, arsenic, and mercury. Sampling and data collected in 1971, 1979, source—Kushkokwim River)...
and 1999 have documented exceedances for the metals antimony, arsenic, and mercury. The Red Devil mine site, a pollutant source.

Comment [j135]: Who conducted the sampling? leading to this impairment is under consideration for the Superfund's National Priorities List.

Comment [j128]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source— Kushkokwim River).

Comment [j129]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk Harbor, Little Susitna River—also missing pollutant source—Kushkokwim River)..

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	<u>Alaska ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollu</u> Soure	
IN	Category 5 Section 303(d)	40510-003	Slate Creek	Denali National Park	2.5 miles	Turbidity	Turbidity	M	Ones, are not including this information (see Sait Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source— Kushkokwim River).
DEC	placed Slate C	Comment [j129]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk							
mini	ng activities. C	currently there is	s no active mining	on Slate Creek a	and current Natio	onal Park Service (N	NPOS) policy will not	permit	

placer mining NPS implemented the A recovery plan between implementation began in August 1997 and through 2002 2002. The recovery plan included restoration objectives for 4 acres of disturbed upland and stream channel areas in the vicinity of the old antimony mine site. Objectives included placement of fill over exposed antimony ore body, reconfiguration of the stream channel, increasing the Ph of acidic soils, and revegetation of disturbed soils with willow and alder seedlings. DEC and NPS staff visited Slate Creek was visited by DEC staff and NPS staff in 2006 to review the effectivensess of the for a general site review of the recovery plan implementation that was completed in 2002 and found that. The 2006 site visit revealed that many of the restoration actions the recovery plan was not successful and had many areas where the implements were no longer performeding their function propelly. NPS staff visited Slate Creek twice in the 2007 field season to revise the for an amended recovery plan development purposes by NPS and contract personnel to. Concept plans have been developed to address the surface and groundwater drainage for erosion control and acidic (AMD) mitigation. If funding becomes available, NPS will begin restoration actions during work will begin in 2010.

\mathbf{SC}	Category	20505-401	Big Lake	Wasilla	1,250 acres	Petroleum	Total Aromatic	Motorized
	5 Section					Hydrocarbons	Hydrocarbons	watercraft
	303(d)						(TAH)	
	listed							

A. Waterbody Categories 2 through 5

Pollutant

Water Quality

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Area of

Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Alaska ID

								-	=		
<u>ion</u>	Category	Number	<u>Waterbody</u>	<u>Location</u>	Concern	<u>Standard</u>	<u>Parameters</u>	Soure	C		
									0		
DEC	placed Big La	ke <u>on the 2006</u> 4	was _Section 303(d	l) list ed in 2006 t	for non-attainme	nt of the petroleum	hydrocarbons (TAH)	-water d	C		
stand	standard as a result of - Total Aromatic Hydrocarbons (TAH). Two reports which support this impairment listing: "Big Lake and Lake"										
Lucil	Lucille Water Quality Monitoring Final Report (September 2, 2004)" prepared by Oasis Environmental, Inc. for DEC; and "Big Lake" K										
Qual	ity Monitoring	Report (June 1:	5, 2006)" prepared	l by Oasis Enviro	onmental, Inc. fo	r DEC. DEC colle	cted water quality info	ormatio	C		
Lake	beginning in t	he open water n	nonths in 2004 and	l again in open v	vater months of 2	2005_ . Sampling w	as conducted in the wa	ater col	0		
multi	ple sites for pe	troleum, fecal c	coliform bacteria, i	nutrients, dissolv	ed oxygen, pH, t	emperature, turbid	ity, conductivity, and	salinity	C		
concl	luded that San	ipling results in	dicated water qual	lity criteria were	met for all of the	ese parameters with	the exception of petr	oleum	SO		
hydro	ocarbons (<u>t</u> T A	H). Sampling si	ites in areas that re	ceived heavier u	se by motorized	watercraft during t	he summers consisten	tly exce	_		
the V	VQS for petrol	eum hydrocarb e	ons (TAH) both su	mmers. WQS In	2004, the TAH	_concentration ins	side the swimming are	a at the			
Shore	e State R<mark>ecreat</mark>	ion Area was 4'	7 μg/L. TAH sam	ples were collect	ed at multiple si	tes, depths and amo	ounts of motorized lak	e usage.	_Τ		
conce	entrations are l	ikely influenced	l by a combination	of good weathe	r and time of sea	son. The sample e	vents that coincided w	rith the l	hi		
mean	air temperatu	res are likely als	so prime recreation	nal dates based o	n the increased r	notorized watercraf	ft usage at these times	-DEC			
		C 11			250		/ * C N / 1 5	4 . C			

Shore State Recreation Area was 47 µg/L. TAH samples were collected at multiple sites, depths and amounts of motorized lake usage. TAH concentrations are likely influenced by a combination of good weather and time of season. The sample events that coincided with the higher mean air temperatures are likely also prime recreational dates based on the increased motorized watercraft usage at these times. DEC estimates that Specifically, the areas of impairment is an estimated 1,250 acres, and are seasonal in nature (-i.e., from May 15 to September 15), and located are in the east basin (-including the traffic lane between the east and west basins), and these specific areas in the east basin: heavily used areas; harbors and marinas; launch areas; and traffic lanes, except for the areas north of Long Island. Sampling was conducted outside the specific areas designated above and exceedances were not seen in these other areas. The two reports which support this impairment litting are: "Big Lake and Lake Lucille Water Quality Monitoring Final Report (September 2, 2004)" prepared by Oasis Environmental, Inc. for DEC; and "Big Lake Water Quality Monitoring Report (June 15, 2006)" prepared by Oasis Environmental, Inc. for DEC. Exceedances were not seen at the 5 meter depth, which was the deepest depth sampled. Although there was no water quality sampling below 5m in depth it is considered unlikely that petroleum contaminated sediment is a concern. Given the close correlation observed between levels of petroleum and the extent of motorized watercraft use, DEC believes the source of petroleum in the water column is solely motorized watercraft and specifically in the water column. DEC Additional water quality sampling was conducted sampling in 2009 and the results continue to show. These documented exceedances of the petroleum hydrocarbons water quality standard, required that Big Lake was placed on the Section 303(d) list (Category 5) as impaired in the 2006 Report.

Comment [j128]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source— Kushkokwim River).

Comment [j129]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk Harbor, Little Susitna River—also missing pollutant source—Kushkokwim River)...

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A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

<u>Reg</u> <u>ion</u>	Category	<u>Alaska ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters		Comment [j128]: Some listings, especially new ones, are not including this information (see Salt
SC	Category 5 Section 303(d) listed	30101-500	Cold Bay	King Cove, Alaska Peninsula	0.01 acre	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Mil	Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source—Kushkokwim River). Comment [j129]: Some listings, especially new ones are not including this information (see Salt

nent [j129]: Some listings, especially new are not including this information (see Salt DEC placed Cold Bay was placed on the 1998 Section 303(d) list for non-attainment of the petroleum hydrocarbons, oil & grease stan Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk petroleum products. Enough evidence exists to indicate that water quality violations occurred on a persistent (though intermittent) bas Harbor, Little Susitna River—also missing pollutant US Army Corps of Engineers (USACE) USACE has completed the all necessary site characterization and found a seep (oil mixed with source—Kushkokwim River).

with a high level of diesel range organics (DRO) in beach soils (over 10,000 ppm) and petroleum contamination in sediments below the high tide line. - This is a high priority project for the US Army Corps of Engineers (USACE), so they will complete an assessment and recovery investigation of the seep found high a level of diesel range organics (DRO) in beach soils (over 10,000 ppm) and petroleum in sediments below the high tide line. Four feet of free product was found in a monitoring well in the bluff. Seep (oil mixed weeping out intermittently along 100 300 feet of bluff. In the summer of 2002 the USACE used a pilot test to evaluate several passive and active technologies for recovering product before it would reach the waters of Cold Bay. As a result of this test, The results of this test were used to develop a feasibility study to determine the best solution for the beach seeps. The feasibility study was completed in 2003. The proposed plan and decision documents (Record of Decision), were signed. The USACE agreed to dig and treat petroleum contaminated soil to 15 feet. Contaminated soil below 15 feet to undergo in situ treatment. In 2006, USACE conducted sSoil excavation and treatment, specifically excavated and thermally treated were conducted in 2006. For the drum disposal and beach seep area a two phased selected. In the summer of 2006, soil fifteen feet below ground surface and above, was excavated and thermally treated. approach was <u>During In the 2007, USACE field season the Corps of Engineers</u> installed bioventing and <u>upgraded the additional-SVE/HVE</u> (soil vapor n vacuum extraction (SVE) wells to continue remediating the area. - The amount of contamination discharging to the beach extraction/hig decreased markedly with the petroleum sheen is getting smaller according to -DEC's Contaminated Sites program reports that the petroleum g smaller every time inspections are made on site. In the spring of 2007 one had to look pretty hard to find it. The sheen seems sheen is getting the spring hence spring 2008 site inspections are proposed. Bioventing and upgrades to the SVE/HVE (high vacuum of biodegradation. The US Army Corps of Engineers (USACE) intends to complete an assessment winter of 20 and recovery lan for this water.

Comment [j136]: Are they still intending to develop this plan? Seems like they have completed many of the planned restoration actions.

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A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	<u>Alaska ID</u> Number	Waterbody	Location	Area of Concern	Water Quality Standard	<u>Pollutant</u> Parameters	<u>Pollui</u> Soure	
SC	Category 5 Section 303(d)	20505-001	Cottonwood Creek	Wasilla	7 miles	Fecal Coliform Bacteria	Fecal Coliform Bacteria	Uı Ru	ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Little Sustina River—also missing pollutant source— Kushkokwim River).
	listed								Comment [j129]: Some listings, especially new ones, are not including this information (see Salt
DEC	placed Cotton	wood Creek (13	3 miles) <u>on the 200</u>	<u>)2</u> was Section 30	03(d) list ed _for n	on-attainment of the	ne residues standard fo	r foam	Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk
debri	s in 2002/2003	as a result of -	DEC has received	numerous comp	laints about foar	m observed in the c	reek in 1998, 2000, 20	01 and	Harbor, Little Susitna River—also missing pollutant

Based on the win Cottonwood Creek and foam was observed in the creek in 1998, 2000, 2001 and 2002; it is a recurring problem, witt source—Kushkokwim River)... existing controls to address it. Through grant funds, an intensive water quality evaluation was conducted on Cottonwood Creek beginning in September 2004 and continuing through June 2006 for a TMDL assessment. Water quality sampling results and assessment conducted in 2004 2005, DEC concluded indicated that the foam present in Cottonwood Creek is most likely naturally occurring; hydrologic changes

within the watershed may be influencing the amount and timing of the foam. DEC moved this water and impairment to Category 2 of the 2010 Integrated Report. Based on wHowever, hydrologic changes within the watershed may be influencing the amount and timing of the foam. Water quality sampling results from in-2006, 2007 and 2008, DEC found focused on determining texceedances of the he extent of

fecal coliform bacteria and temperature exceedances discovered during the sampling for foam. Additional bacteria and temperature sa Comment [j137]: Will need to update the is scheduled IPEC intend to develop a recovery plan that includes for 2007/2008 to determine potential sources and stretches of possib narrative and explain why temperature is not listed impairment. Data will be used to develop a recovery plan.

when DEC found exceedance of the temperature WOS.

\mathbf{SC}	Category	30401-601	Dutch Harbor	Unalaska	0.5 acre	Petroleum	Petroleum	Industrial,	
	5 Section			Island		Hydrocarbons,	Products	Urban	ı
	303(d)					Oil & Grease		Runoff	
	listed								

DEC placed Dutch Harbor on the was-1994 Section 303(d) listed in 1994 for non-attainment of the petroleum hydrocarbons, oil & grease standard for petroleum products b. ased on aAn EPA study in August 1994, Water Quality Assessment for Greater Unalaska Bay Au Formatted: Font: Not Italic

1994). In 2006, concluded the waterbody was impacted by petroleum products. DEC began an TMDL assessment to compile began in 2006 with completing an existing data compilation and identifying and prioritizeing potential risk sources. DEC conducted Rigorous-field sampling events during were conducted in April 2007, September 2007 and September 2008 thatand included water column and sediment samples for BTEX, PAH and TOC. DEC conclude that Results indicate the water column meets standards but several sediment results had surface sheening in exceedance of the standard. <u>DEC futher</u>

refined and reduced t—The area of impairment has been further refined and reduced, as a result of the field sampling results (and includinges two near-shore areas). DEC moved (The area of the harbor that has been found to meeting the petroleum hydrocarbons standard has been moved to Category 2 in the 2010 Integrated Report. DEC The TMDL is scheduled to complete the TMDL for completion by June 30, 2010 with implementation focusing on docks and harbor best management practices to minimize any new petroleum hydrocarbon inputs to the area.

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	<u>Alaska ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollu</u> Soure	
SC	Category 5 Section 303(d)	30203-001	Egegik River	Egegik	0.25 mile	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Spills Tank Unde	Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source—
	listed								ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk
DEC	placed tThis v	vaterbody on the	e 2002 was Section	303(d) list ed for	r non-attainmen	t of the petroleum h	ydrocarbons, oil & gre	ease for	Harbor, Little Susitna River—also missing pollutant

petroleum products in 2002/2003. There are at least three major sources for contamination that migrated into the groundwater and thro soils into the Egegik River: the former locations of two 10,000 gallon gasoline tanks, an unlined diesel tank farm, and the underground threaded-cour ling pipeline from the tank farm on the bluff that leaked gasoline in April 2001- and very extensive contamination is suspected from tThe area used to house fuel tanks and was filled from a barge in the river, and characterization has not been completed. DEC believes It is believed that the old fuel tanks were in place and active from the 1960's through the 1990's and continues to be a problem. The river inundates the soils behind the seawall (which are contaminated) regularly when the tide comes up. The monthly high tides usually breach the seawall and flood the area landslide. Fuel reaches the water from the April 2001 gasoline spill. This is a continuous occurrence. It appears that the ground waters are hydrologically connected to the river and that the fuels will continue to m grate to the river. Photograph documentation shows petroleum daylighting into the river and sheen on the water. The problem is likely to remain chronic unless the contaminated soils are excavated and free product recovery is completed.

SC	Category	20201-401	Eyak Lake	Cordova	50 feet of	Petroleum	Petroleum	Above
	5 Section				shore-line	Hydrocarbons,	Products,	Ground
	303(d)					Oil & Grease	Petroleum	Storage
	listed						Contamination,	Tanks, Spills
							Sheen	

DEC placed Byak Lake was placed on the 2002/2003 Section 303(d) list for non-attainment of the petroleum hydrocarbons, oil and grease standard for petroleum products. Cordova Electric Power Plant on Eyak Lake conducted r-Remedial actions --- at the Cordova Electric Power Plant on Eyak Lake, including a groundwater pump-and-treat system and passive product collection. These actions have been effective at eliminating sheen on the surface of the lake, which was, which was last observed in 2005. Groundwater treatment and monitoring is anticipated to continue at this site in the future. In 2005 and 2006 two water quality studies were completed on the lake. These studie Comment [j138]: Who conducted these studies? showed the lake meeting standards but local residents expressed concerns about other petroleum related concerns. During 2009, DEC Cite title, author and dates for each study As such, additional evaluation was warranted and a study to was started in 2009 and will be completed in evaluate the local residents' concerns and 2010. When data collection is complete a determineation will be made whether a TMDL is required.

Comment [j139]: What other concerns? Please

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	<u>Alaska ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollu</u> Soure	
SC	Category 5 Section 303(d)	20401-412	Hood/Spenard Lake	Anchorage	307 acres	Dissolved Gas	Low Dissolved Oxygen	Rı	Ones, are not including this miorination (see Sait Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source—Kushkokwim River).
DE	listed	Spenard Lake o	n the 2002 was or	iginally-Section	303(d)- <u>list listed</u>	in 1990 and in 1993	2-for non-attainment o	f the <u>di</u>	Comment [j129]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk
gas	fecal coliform t	oacteria standaro	992 Sc	Harbor, Little Susitna River—also missing pollutant					

303(d) list for fecal coliform bacteria, lead, nitrates, and phosphates. A TMDL was developed for fecal coliform bacteria in 1997 and waterbody remains on the Section 303(d) list (Category 5) only for dissolved gas (i.e., low dissolved oxygen). A later DEC water quality assessment also assessed the four other pollutants of concern of petroleum, nitrates, lead, and ammonia. However, the data indicated that there are no persistent violations of these parameters. Priority actions identified for this water includes: Ted Stevens Anchorage International Airport (TSAIA) shunting away much of the storm water from the tarmac and installation of retention ponds to treat storm water coming from the parking lots; future construction to improve drainage in the area; track ongoing stormwater rerouting projects and water quality sampling being done by TSAIA; and conduct monitoring of nutrients and storm water BMP effectiveness. TSAIA submitted and DEC approved a waterbody recovery plan for Hood/Spenard Lakethis waterbody(s).

Recovery plan contaminated storm water away from the waterbody.

COIILLI	innaca storin w	acci avvay nom a	e waterbody.					1
\mathbf{SC}	Category	30102-602	Iliuliuk	Unalaska	Petroleum	Petroleum	Urban	l
	5 Section		Harbor	Island	Hydrocarbons,	Products	Runoff	l
	303(d)				Oil & Grease			l
	listed							l

DEC placed Iliuliuk Harbor on the 1990was Section 303(d) listed in 1990 for non-attainment of the petroleum hydrocarbons, oil & grease standard for petroleum Products based on a. An EPA study, in August 1994, Water Quality Assessment for Greater Unalaska Bay, (August 1994) showing concluded that the waterbody was impacted by petroleum products. In 2006, began an assessment to compile existing data and identify and prioritize potential risk sources. DEC conducted field sampling events during April 2007, September 2007 and September 2008 that included water column and sediment samples for BTEX, PAH concluded that the water column meets standards but several sediment results had surface sheening in exceedance of the standard. DEC futher refined and red ced the area of impairment, as a result of the field sampling results TMDL assessment began in 2006 with completing an existing data compilation and prioritizing potential risk sources. Rigorous field sampling events were conducted in April 2007, September 2007 and September 2008 and column and sediment samples for BTEX, PAH & TOC. Results indicate the water column meets standards but several sediment results had included water surface sheenir in exceedance of the standard. The area of impairment has been further refined and reduced as a result of the field sampling and includes nearshore areas around docks and harbors. The TMDL is scheduled for completion by June 30, 2010 with implementation focusing on docks and harbor best management practices to minimize any new petroleum hydrocarbon inputs to the area. DEC moved the area of the harbor that has been found to meeting the ocarbons standard to Category 2 in the 2010 Integrated Report. DEC scheduled to complete the TMDL by June 30, 2010 with implementation petroleum hydr focusing on docks and harbor best management practices to minimize any new petroleum hydrocarbon inputs to the area.

A. Waterbody Categories 2 through 5

Comment [j129]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk

Harbor, Little Susitna River-also missing pollutant

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

	<u>Reg</u> <u>ion</u>	<u>Category</u>	<u>Alaska ID</u> <u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollui</u> <u>Soure</u>	Comment [j128]: Some listings, especially new ones, are not including this information (see Salt
	SC	Category 5 Section 303(d)		Little Susitna River		12 miles, RM 15 to RM 27	Petroleum Hydrocarbons	Total Aromatic Hydrocarbons (TAH).	Wat	Olies, ac hot including lim information (see Sain Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source— Kushkokwim River).
_	DEC	listed	Sucitno Divor o	n the 2010 Section	202(d) list for n	on attainment of	f the petroloum hud	Watercraft	y stond	Comment [j129]: Some listings, especially new ones, are not including this information (see Salt

result of Total Aromatic Hydrocarbons (TAH). In 2007, the ADEC conducted preliminary petroleum hydrocarbon sampling (Volatil Organic Carbons, VOCs) on the Little Susitna River from the Parks Hwy. bridge downstream to below the Public Use Facility located source—Kushkokwim River)... mile 25. As a result, DEC conducted s led to more intensive petroleum hydrocarbon investigations (Total Aromatic Hydrocarb Formatted: Font: Bold 2008, 2009 and 2010, coinciding with the Chinook (May - June) and Coho (July - September) fisheries. Data collected during the fall spring 2008, fall 2008, and spring 2009 document concentrations of TAH that exceed the water quality standard of 10 ug/L. TAH Formatted: Font: Times New Roman Bold exceedances were observed on one (1) sample date in August 2007, on four (4) sampling dates in June 2008, four (4) sample dates in Formatted: Font: Not Bold 2008, one (1) sample date in June 2009, and preliminary results indicate several dates with exceedances in August 2009. Sampling is scheduled for spring 2010. TAH exceedances ranged from slightly over 10 ug/L to over 75 ug/L (recorded below the PUF in spring 2008.)

The volume of water within the Little Susitna River ranged from 251 cfs to 927 cfs during sample dates. The likelihood of exceeding the WQS for TAH is closely related to the amount of discharge in the river. Outboard engines are the source of the hydrocarbons. Effected river

mines	innes are RM 13 to RM 27. The DEC is also studying turbidity revers in this section of the river.										
SC	Category	20402-001	Matanuska	Palmer	½ mile	Residues	Debris	Landfill			
	5 Section		River								
	303(d)										
	listed										

DEC placed this segment of the Matanuska River was placed on the 2002/2003 Section 303(d) list for non-attainment of the residues

standard for debris. There is an active open dump located on and in the Matanuska River just north of Eagle Drive in Palmer. Numerous derailed railroad cars are visible in the river and riparian area. The main site of concern is the active dump. The DEC inspector observe Comment [j140]: When was the inspection Visible contents of the dump at the time of the inspection were a minimum of 20 vehicles, household refuse and items, fuel cans, poss conducted? What year gallon drums with unknown contents, grass cuttings, and just overall scrap metal and other debris with -dDebris continues in the river and riparian area upstream for approximately 1/2 mile. River channels run through and next to the dump at all times of the year. The DEC observed vVisible sheens have been observed in the river. This open dump is not only an immediate threat to the surface water quality of the

Matanuska River, but is within the Drinking Water Protection Area for a minimum of three public water systems. In August 2004 the DEC conducted a site assessment study characterizing and quantifying the debris, mapping the site, and conducting surface water, sediment and soil samples. DEC discovered nNo hazardous or petroleum contamination-was discovered. As part of the assessment After characterizing the debris, DEC the study described developed options for possible debris removal. In subsequent meetings with involved parties, in March 2005, the Army Corps of Engineers issued a jurisdictional declaration that the railroad cars that are below ordinary high water (OHW) serve as bank stabilization material. As such, these items are no longer in violation of WQS. However, the remaining debris on the slope above OHW has a potential of entering the water column and the upper layers are not considered bank stabilization material. The Alaska Railroad Corporation (ARRC), as the property owner, needs to work with DEC Solid Waste staff on developing a plan with goals and a timeline delineating the ARRC's commitment to cleaning up the site.

\mathbf{SC}	Category	30101-502	Popof Strait	East	5 miles	Residues	Seafood Waste	Seafood
	5 Section			Aleutians			Residue	Processor
	303(d)			Borough				
	listed							

A. Waterbody Categories 2 through 5

Pollutant

Water Quality

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

<u>Area of</u>

Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

ion	<u>Category</u>	<u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Concern	<u>Standard</u>	<u>Parameters</u>	Soure (

							ard from seafood waste	
listed	this waterbody	based on c-Infor	mation provided by	the Aleutians Ea	ist Borough, and v	verified by DEC staf	f , included c itizen comp	olaints,
photo	graphs, and oth	er information th	<u>natto</u> indicate that p	ersistent exceedar	nces of "seafood r	esidue" occur from a	seafood processor ope	rating a
to the	waterbody. Th	e seafood proces	sing facility located	l in Sand Point ha	s-installed a fish r	neal plant <mark>at the San</mark>	d Point facility which re	educe <u>ds</u>
							g BOD5 limit covering	
well a	s the one in Ak	utan) where ther	e is a BOD5 limit a	t-for the Sand Poi	int facility. An Ap	ril 2000 dive survey	report documents 3.0 a	cres of
in exc	ess of the nerm	itted facility's au	ithorized one acre z	one of denosit. T	here is no more re	cent dive survey info	ormation sincethen the	2000 di

Reg

Comment [j128]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source—Kushkokwim River).

Comment [j129]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk Harbor, Little Susitna River—also missing pollutant source—Kushkokwim River)..

								(
surve	у.							
SC	Category	30102-409	Red Lake	Kodiak	2.0 acres	Toxic & Other		Urban
	5 Section		Anton Road			Deleterious	Tuon	Runoff
	303(d)		Ponds			Organic and	Iron,	
	listed					Inorganic	Manganese	
						Substances		

DEC placed Red Lake Anton Road Ponds were placed on the 1994 Section 303(d) list for non-attainment of the toxic & other deleterious organic and inorganic substances standard for metals (iron and manganese). Based on a 1992 memorandum released by DEC Kodiak Field Office, Red Lake lies less than 200 feet from a Navy Landfill. This landfill was constructed without a liner or leachate collection system. Landfill waste, which may include solvents, paints, used oils, and contaminated fuel, occasionally leaches into Red Lake and two other small ponds near Anton Road. These two ponds are highly colored by bright orange-red iron precipitates caused by the oxidation of the leachate. Lake sediment samples were found to contain 8.6% iron. Chemical pollutants were documented at low levels in the lake and in the bottom sediments. DEC staff reviewed four reports from 1996 and 1997. Based on the data presented in the reports, is the best available to the department and DEC concluded that: (1) Red Lake clearly appears to have exceedances of water quality standards for iron and manganese due to human actions; (2) there are no existing controls in place to ensure that the water quality standards will be met in a reasonable time period; (3) the reports did not present any information showing levels of iron and manganese in groundwater above the landfill; so there is no information showing that the abandoned landfill is not the source of these metals; and (4) although there were other parameters of concern observed in previous sampling, the available information indicates that Red Lake only exceeds the WQS should only be listed for manganese and iron.

A. Waterbody Categories 2 through 5

sing pollutant

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	Alaska ID Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollu</u> Soure	
SC	Category 5 Section 303(d)	20401-020	Ship Creek Glenn Hwy. Bridge. Down	Anchorage	11 miles, Glenn Hwy. Bridge.	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	U: Ri	Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source— Kushkokwim River).
	listed		to Mouth		Down to Mouth				Comment [j129]: Some listings, especially new ones, are not including this information (see Salt
DEC	placed t This s	egment of Ship	Creek on the 1990	was Section 30	3(d) list ed in 19	or non-attainme	ent of the petroleum hy	drocar	Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk Harbor, Little Susitna River—also missing pollutant

& grease standards. Based on the fecal coliform bacteria monitoring data from 1989-1994 provided by the Municipality of Anchorage source—Kushkokwim River)... eriteria for drinking water and contact recreation were exceeded at various times. Petroleum products floating on ground water are moving from the site towards Ship Creek that threatens the waterbody. In 1992 fecal coliform bacteria was added to the Section 303(d) listing an impairing pollutant. The final fecal coliform bacteria TMDL was approved by EPA in May 2004. Ship Creek remains Section 303(d) listed for petroleum product impairment. EPA currently has a consent decree with the Alaska Railroad Corporation Terminal Reserve which includes volves water quality monitoring for petroleum. The results of these studies will assist DEC in determining the next best recovery actions for Ship Creek with including the possible development of a TMDL or similar recovery plan. Sampling was conducted in

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	<u>Alaska ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollu</u> Soure	Commen	t [j128]: Some listings, especially new ot including this information (see Salt
SE	5 Section 303(d) listed	Carro (ES20)	Coffman Cove creeks – ten (10) separate creeks	Prince of Wales Island	02/11/14/5	Toxic & Other Deleterious Organic and Inorganic Substances pH	pH, Metals – aluminum, cadmium, copper, iron, lead, mercury, nickel, selenium, zinc	Cons	Chuck Bay Susitna Riv Kushkokw Commen ones, are n Chuck Bay Harbor, Li source—K	, Kendrick Creek, Coffman Cove, Little ver—also missing pollutant source—

inorganic substances standard for metals (aluminum, cadmium, copper, iron, lead, mercury, nickel, selenium, zinc) and and pH. The-se Formatted: Font: Not Bold the impairment is due to exceedances for pH and metals associated with the placement of corrosive rock material (B-5) in wetlands on Formatted: Font: Not Bold

of Wales Island as part of a Western Federal Lands and Highway Division (WFLHD) Forest Service Road 3030 construction project. reports in 2007 identified excessive culvert corrosion along a portion of the road and subsequent evaluation found the stream pH at problem culverts to be 2.3. WFLHD conducted additional studies during 2008, with the results released in November 2008 and January 2009. These studies provided a basis for prioritizing 8 locations for CERCLA response based water chemistry, biological assessment, soils and sediment analysis, and fish assessment. Analysis conducted in 2009 indicated three to 16 exceedances of Alaska Water Quality standards per site for

metals, chloride, color, pH, dissolved oxygen, sulfate, and total dissolved solids. The impacted runoff migrates into anadromous stream feed Sweetwater Lake. During May 2009, the United States Department of Agriculture (USDA) issued a Time-Critical CERCLA R included on the listing? Action Memorandum was issued by the United States Department of Agriculture (USDA) in May of 2009 indicating that the removal of source material would begin in the summer of 2009 and conclude during the 2010 field season. USDA installed fFilter trenches and limestone mitigation measures was introduced to address pH exceedances. DEC staff will be working with federal and state agencies to collect water

quality and assess ongoing mitigation efforts.

SE	Category	10203-002	Katlian River	N. of Sitka,	4.5 miles	Sediment,	Sediment,	Timber
	5 Section			Baranof		Turbidity	Turbidity	Harvest
	303(d)			Island				
	linto d							

DEC placed Katlian River on the 1998was Section 303(d) listed as impaired in 1998 for non-attainment of the sediment and turbidity standards. Past land use activities have created a number of concerns for water quality, and fish habitat. The harvest of riparian timber and location and lack of maintenance of the road system created the following concerns: decreased channel stability, landslides and small slope failures, increased sediment levels, loss of aquatic habitat, siltation of holding pools for migrating salmon, and alteration of watershed hydrology. Watershed effects resulted in use impairment for aquatic life. The Forest Service (in cooperation with EPA and DEC) is currently conducteding in depth turbidity monitoring and aquatic habitat condition assessments to determine the validity of the impaired water body listing for this watershed. If the assessment indicates that the water body was erroneously listed, the water body will be moved to Category 2. If water quality or habitat impairments are identified in the assessment, restoration plans to establish pollution control requirements will be developed.

Comment [j142]: I don't believe this is true. We have no plans to conduct such an assessment at this time and DEC did not request funds for this project.

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

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Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	<u>Category</u>	<u>Alaska ID</u> Number	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollui</u> <u>Soure</u>	Comment [j128]: Some listings, especially new ones, are not including this information (see Salt
SE	Category 5 Section 303(d) listed		Kendrick Creek	South end Prince of Wales		Toxic & Other Deleterious Organic and	Radioactive Contaminants - gross alpha, gross	Abai N	Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source— Kushkokwim River).
				Island		Inorganic Substances	beta		Comment [j129]: Some listings, especially new ones, are not including this information (see Salt Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk

DEC placed Rendrick Creek is placed on the 2010 Section 303(d) list of impaired waters for non-attainment of the toxic & other delet Harbor, Little Susitna River—also missing pollutant source—Kushkokwim River).. Ross Adams Mine is located. During 1995 and 1997, U.S. Bureau of Land Management (BLM) conducted aA preliminary assessment and site inspection conducted pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The by the U.S. Bureau of Land Management (USBLM) in 1995 and 1997, and a Preliminary Assessment/Site Inspection Report: Ross Adams Uranium

Mine. Prince of Wales Island, Alaska- (Kent and Sullivan 2004), revealed that gross alpha and gross beta exceed water quality standar Comment [j143]: May want to explain why it

took 6 years before DEC added this water to the list when information was available in 2004.

A. Waterbody Categories 2 through 5

Category 5/Section 303(d) Listed Waterbodies

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Category 5 Waterbodies - Impaired by pollutant(s) for one or more designated uses and requiring a TMDL. CWA Section 303(d) Listed.

Reg ion	Category	<u>Alaska ID</u> <u>Number</u>	<u>Waterbody</u>	<u>Location</u>	Area of Concern	Water Quality Standard	Pollutant Parameters	<u>Pollu</u> Soure				
SE	Category 5 Section	10303-004	Pullen Creek (Lower Mile)	Skagway	Lower mile of Pullen	Toxic & Other Deleterious	Metals	Ind	Chuck Bay, Kendrick Creek, Coffman Cove, Little Susitna River—also missing pollutant source—			
	303(d) listed		,		Creek	Organic and			Kushkokwim River).			
						Inorganic		\	Comment [j129]: Some listings, especially new			
						Substances			ones, are not including this information (see Salt			
	DEC placed Pullen Creek has been on the 1990 Section 303(d) list since 1990 for non-attainment of the toxic & other deleterious organic substances standard for metals. DEC previously placed the lower mile of Pullen Creek on the Section 303(d) list with Skags (Chuck Bay, Kendrick Creek, Coffman Cove, Illiuiuk Harbor, Little Sustina River—also missing pollutant source—Kushkokwim River—also missing pollutant source—fushkokwim River—also missing po											
Harb	Harbor and DEC placed Pullen Creek as a separate waterbody in the 2006 Section 303(d) list. The lower mile of Pullen Creek was previously											
Secti	Section 303(d) listed with the Skagway Harbor listing but was segmented out into its own listing in the 2006 report. A local non-profit group											
comp	completed an environmental assessment on the creek, collecting baseline monitoring data on water quality, flow and sedimentation data, and											
4 1	I		D. 11 C 1. 1	2006			. C	1				

completed an environmental assessment on the creek, collecting baseline monitoring data on water quality, flow and sedimentation data, and development of an action strategy for Pullen Creek in 2006. Assessment results found no elevated levels of toxics found in water column. Elevated levels of lead, zinc and barium are found in stream bottom sediments and adjoining banks. Stream banks are very stable but elevated levels of metals are found near railroad transport areas where ore was transported in the past. A Waterbody Recovery Plan with Best

Management Practices (BMPs) was completed in 2006 with major riparian restoration projects completed in the Summer of 2009 Comment [j144]: Who developed this plan? Category Salt Chuck Kasaan Toxic & Other Metals - copper Comment [j145]: May want to mention that area, Prince 5 Section Bay Deleterious DEC is developing a TMDL to completed during 303(d) of Wales Organic and 2010. listed Island Inorganic

DEC placed Salt Chuck Bay in the 2010 is Section 303(d) listed in 2010 for non-attainment of the toxic & other deleterious organic and inorganic substances standard for coopermetals. The Salt Chuck Mine was listed on the Federal Agency Hazardous Waste Compliance Docket and published in the Federal Register on June 27th, 1997 as studies indicated physical and chemical hazardous to the public an environment. At the request of the USFS, URS Engineering initiated an Engineering Evaluation/Cost Analysis (EE/CA) of the site in 2002 with additional data collection and investigation conducted in 2006. On September 23rd, 2009, EPA proposed—the Salt Chuck Mine was proposed—for addition to the Environmental Protection Agency's (EPA) "National Priorities List" asfor the most contaminated sites in the nation. Copper concentrations- found in the intertidal water column exceed state water quality standards. In addition sediment/tailings found

n the intertidal zone exceed state sediment quality guidelines listed under the SPAR program.

Comment [j147]: What does SPAR stand for?

Substances

in the	e intertidal zon	e exceed state s	ediment quality gu	idelines listed ui	nder the SPAR p	rogram.		Comment
SE	Category	10303-601	Skagway	Skagway	1.0 acre	Toxic & Other	Metals	Industrial
	5 Section		Harbor			Deleterious		
	303(d)					Organic and		
	listed					Inorganic		
						Substances		

DEC placed Skagway Harbor has been on the 1990 Section 303(d) list since 1990 for non-attainment of the toxic & other deleterious organic and inorganic substances standard for metals. A 1984 draft report from the U.S. Fish and Wildlife Service titled Trace Metals Contamination at an Ore Loading Facility in Skagway, Alaska indicated that Terace metals contamination are due to an ore loading facility in Skagway (Trace Metals Contamination at an Ore Loading Facility in Skagway, Alaska, Draft Report, U.S. Fish and Wildlife Service, 1984). Elevated levels of lead, zinc, cadmium, copper, and mercury in marine sediments were found to exceed DEC (SPAR) values of the control area. Reduced and less diverse Additionally, infauna found in the marine sediments were much reduced and diversity was correlated with the concentration of lead and zinc in the sediment demonstrating; an adverse effect to the aquatic life designated use. DEC previously placed the lower mile of Pullen Creek on was previously the Section 303(d) listed with the Skagway Harbor and DEC placed Pullen Creek as a separate water body in the 2006 Section 303(d) list listing but was segmented out into its own listing in the 2006 report. The DEC is has required contractor assistance in evaluating data_and-determining data gaps and developing a technical approach during 2010.

B. Waterbodies Removed From the Section 303(d) List

APPENDIX B

Waterbodies Removed From the Section 303(d) List

Comment [j148]: See comments on the narratives from Categories 2 and/or 4.

Section 303(d) Listed Waterbodies in 2008 Removed from the List in 2010

Waterbodies Removed from Section 303(d)List

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Section 303(d) Listed Waterbodies in 2008. Removed from the List in 2010.

Region	<u>New</u> <u>Category</u>	<u>Alaska ID</u> <u>Number</u>	Waterbody	Location	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sources
IN	Category 2	40510-005	Caribou Creek	Denali National Park	16.1 miles	Turbidity	Turbidity	Mining

REASON FOR REMOVAL: No impairment exists from turbidity, attaining water quality standards.

Caribou Creek was included on the 1994 Section 303(d) list for turbidity from past mining activity within Denali National Park and Preserve. The waterbody lost its sinuosity along segments of the watershed. Currently there is no active mining on Caribou Creek and current National Park Service (NPS) policy will not permit future placer mining. A site visit with NPS, EPA and DEC was conducted in 2009 to review the progress of previous reclamation efforts and to assess any areas requiring additional reclamation activities. NPS established seven cross sections for floodplain design purposes along with before and after topographic monitoring. Channel locations and sinuosity were GPS surveyed, and water discharge measurements were taken. The discharge data are currently being reviewed to identify any exceedances to the water quality standards. A draft recovery plan has been prepared to reconstruct the floodplain, rebuild the channel(s), and provide for more natural overbank flooding and deposition. The re-construction will be followed up with a revegetation effort. If funding becomes available, work is to begin in 2010.

TOTTOWCU	tonowed up with a revegetation errort. It funding becomes available, work is to begin in 2010.											
IN	Category	40506-007	Chena River	Fairbanks	15 miles	Petroleum	Petroleum	Urban				
	2					Hydrocarbons, Oil & Grease	Products	Runoff				
						On a Grease						

REASON FOR REMOVAL: No impairment exists from petroleum hydrocarbons, attaining water quality standards.

Chena River was Section 303(d) listed in 1990 for turbidity, petroleum hydrocarbons, oil and grease, and sediment. The identified pollutant source is urban run-off. DEC conducted sampling in 2005, 2007 and 2009 for hydrocarbons and sediment. Data have shown that the Chena River met water quality standards for the petroleum hydrocarbon standard. Data are currently being reviewed for the sediment standard.

IN	Category 2	40506-002	Chena Slough	Fairbanks	13 miles	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Urban Runoff				
REASON	REASON FOR REMOVAL: No impairment exists from petroleum hydrocarbons, attaining water quality standards.											

B. Waterbodies Removed From the Section 303(d) List

Waterbodies Removed from Section 303(d)List

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Section 303(d) Listed Waterbodies in 2008. Removed from the List in 2010.

	<u>New</u>	<u>Alaska ID</u>			Area of	Water Quality	<u>Pollutant</u>	<u>Pollutant</u>
Region	Category	<u>Number</u>	<u>Waterbody</u>	Location	Concern	<u>Standard</u>	<u>Parameters</u>	<u>Sources</u>

This waterbody was Section 303(d) listed in 1994 for non-attainment of the petroleum hydrocarbons, oil and grease and sediment standards. Information presented in the 1994 Statewide Water Quality Assessment survey indicated that a petroleum problem existed and is affecting water quality. File assessment information indicates nonpoint source problems result from the surface water run-off, road construction, site clearing, and de-watering activities from gravel operations. Based on best professional judgment of DEC staff this water was listed for petroleum products. DEC conducted water quality testing in 2005, 2007 and 2009. Data have shown that the Chena Slough met water quality standards for the petroleum hydrocarbon standard. Data are currently being reviewed for the sediment standard.

SC	Category	20505-001	Cottonwood	Wasilla	Entire 13	Residues	Foam &	Urban
	2		Creek		miles		Debris	Runoff,
								Urban
								Development

REASON FOR REMOVAL: No impairment exists from foamresidues, attaining water quality standards.

Cottonwood Creek (13 miles) was Section 303(d) listed for non-attainment of the residues standard for foam and debris in 2002/2003. DEC has received numerous complaints about foam in Cottonwood Creek and foam was observed in the creek in 1998, 2000, 2001 and 2002; it is a recurring problem, with no existing controls to address it. Through grant funds, an intensive water quality evaluation was conducted on Cottonwood Creek beginning in September 2004 and continuing through June 2006 for a TMDL assessment. Water quality sampling conducted in 2004 – 2005 indicated that the foam present in Cottonwood Creek is most likely naturally occurring. However, hydrologic changes within the watershed may be influencing the amount and timing of the foam. Water quality sampling in 2006 focused on determining the extent of fecal coliform bacteria and temperature exceedances discovered during the sampling for foam. Additional bacteria and temperature sampling is scheduled for 2007/2008 to determine potential sources and stretches of possible impairment. Data will be used to develop a recovery plan.

SC	Category	30401-601	Dutch	Unalaska	0.5 acre	Petroleum	Petroleum	Industrial,
	2		Harbor	Island		Hydrocarbons,	Products	Urban
						Oil & Grease		Runoff

REASON FOR REMOVAL: No impairment exists from petroleum hydrocarbons for much of the harbor area, attaining water quality standards.

This waterbody was Section 303(d) listed in 1994 for non-attainment of the petroleum hydrocarbons, oil & grease standard for petroleum products. The August 25, 1994 Water Quality Assessment for Greater Unalaska Bay determined the waterbody was impacted by petroleum products. Existing data compilation was completed in 2006. Initial field sampling event conducted in April 2007 included water column and sediment samples for BTEX, PAH & TOC. A follow-up sample event was conducted in September 2007. Rigorous field sampling events were conducted in April 2007 and September 2007 and included water column and sediment samples for BTEX, PAH & TOC. All sample results for the harbor indicate that most of the harbor water and sediments are meeting standards for petroleum hydrocarbons and only Two nearshore area are impaired from petroleum hydrocarbons. These sampling events and data may lead to the development of a TMDL.

\mathbf{SC}	Category	30102-602	Iliuliuk Bay	Dutch	Missing	Petroleum	Petroleum	Urban Cor	nment [j149]: Missing area of concern.
	2			Harbor	area of	Hydrocarbons,	Products	Runoff	
					concern	Oil & Grease			

REASON FOR REMOVAL: No impairment exists from petroleum hydrocarbons for much of the bay area, attaining water quality standards.

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B. Waterbodies Removed From the Section 303(d) List

Waterbodies Removed from Section 303(d)List

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Section 303(d) Listed Waterbodies in 2008. Removed from the List in 2010.

D i	<u>New</u>	Alaska ID	Waterbody	T +	Area of	Water Quality Standard	Pollutant	<u>Pollutant</u>		
<u>Region</u>	<u>Category</u>	<u>Number</u>	<u>waterboay</u>	<u>Location</u>	<u>Concern</u>	<u>Stanaara</u>	<u>Parameters</u>	<u>Sources</u>		
Iliuliuk Bay was Section 303(d) listed in 1990 for non-attainment of the petroleum hydrocarbons, oil & grease standard for petroleum										
products. An EPA study in August 1994, Water Quality Assessment for Greater Unalaska Bay, concluded the waterbody was										
impacted by petroleum products. TMDL assessment began in 2006 with completing an existing data compilation and identifying and										
prioritizii	ng notential ri	ck cources R	igorous field sa	mnling events w	ere conducte	d in April 2007 and	September 2007	and included		

water column and sediment samples for BTEX, PAH & TOC. All sample results for the Bay indicate the water and sediments are meeting standards for petroleum hydrocarbons. DEC is de-listing Iliuliuk Bay based on this data.

meeting	rearrant do Tor	otroleann mja	oeuroons. BEC	o to de noting in	arran Baj ca	oca on anno aata.		
SE	Category	10301-004	Jordan	Juneau	3 miles	Sediment,	Sediment,	Land
	4a		Creek		from	Dissolved Gas	Low	Development
					tide-		Dissolved	, Road
					water		Oxygen	Runoff
					up-			
					stream			

REASON FOR REMOVAL: TMDL developed and approved for interstitial dissolved oxygen (DO) to address the sediment and <u>ldissplved gas (low DO impairments)</u>.

A TMDL was developed and approved by EPA for residues on Jordan Creek and is dated May 2005. Since Jordan Creek has an approved TMDL for residues Jordan Creek was removed from the Section 303(d) and moved to Category 4a for residues. Jordan Creek remains Category 5/Section 303(d) listed for dissolved gas and sediment.

SE	Category	10203-602	Klag Bay	West	1.25	Toxic & Other	Metals –	Mining
	4a			Chichagof	acres	Deleterious	Arsenic,	
				Island		Organic and	cobalt,	
						Inorganic	copper, lead,	
						Substances	manganese,	
							mercury,	
							silver, zinc	

REASON FOR REMOVAL: TMDL developed and approved for metals in the intertidal sediments.

REASON FOR REMOVAL: No impairment exists, attaining water quality standards.

Klag Bay was placed on the 1996 Section 303(d) list for non-attainment of the toxic & other deleterious organic and inorganic substances standard for metals. Past mining resulted in the deposition of large amounts of tailings in Klag Bay. A draft 1985 report (not finalized to date) on Klag Bay titled "Klag Bay Study" prepared by the U.S. Fish and Wildlife Service indicated high levels of metals from tailings are leaching into the bay. Contaminants are mercury, arsenic, cobalt, copper, and lead, silver. These metals caused abnormalities in numerous blue mussels. These abnormalities are considered an impairment of a designated use. A 1998 preliminary assessment confirmed lead, silver, arsenic and mercury in the intertidal sediments above NOAA screening benchmarks. A TMDL was developed and approved by EPA on June

1, 2009 for the metals impairments.											
SE	Category	10203-001	Nakwasina	Baranof	8 miles	Sediment,	Sediment,	Timber			
	2		River	Island, Sitka		Turbidity	Turbidity	Harvest			

B. Waterbodies Removed From the Section 303(d) List

Waterbodies Removed from Section 303(d)List

Alaska's 2010

Integrated Water Quality Monitoring and Assessment Report

Section 303(d) Listed Waterbodies in 2008. Removed from the List in 2010.

	<u>New</u>	Alaska ID			Area of	Water Quality	<u>Pollutant</u>	<u>Pollutant</u>
Region	Category	Number	Waterbody	Location	Concern	Standard	Parameters	Sources

Nakwasina River was placed on the 1998 Section 303(d) listed for non-attainment of the sediment and turbidity standards. Past land use activities have created a number of concerns for water quality and fish habitat. The harvest of riparian timber and location and lack of maintenance of the road system created the following concerns: decreased channel stability, landslides and small slope failures, increased sediment levels, loss of aquatic habitat, siltation of holding pools for migrating salmon, and alteration of watershed hydrology. Watershed effects resulted in use impairment for aquatic life. The Forest Service (in cooperation with EPA and DEC) is currently conducting in depth turbidity monitoring and aquatic habitat condition assessments to determine the validity of the impaired water body listing for this watershed. If the assessment indicates that the water body was erroneously listed, the water body will be moved to Category 2. If water quality or habitat impairments are identified in the assessment, restoration plans to establish pollution control requirements will be developed. It is anticipated that this waterbody will be moved to either Category 4b or Category 2 in the 2010 Integrated Report.

C. TMDL Schedule and Factors

APPENDIX C TMDL Schedule and Factors

	ompletion Date Schedule		-	Formatted Table
		June 30. It is expected that f		
		year in which the waterbody		
		MDL is not needed if the wat		
	on actions are ongoing and	ADEC will propose moving	the waterbody to Catego	
2 or Category 4		T		Comment [j150]: To be consistent, include impairment to each waterbody.
Completion date	Southeast	Southcentral	Interior/North Slop	Comment [j151]: Missing Kendrick Creek
June 2010			Chena River (sediment)	(radioactive contaminants: gross alpha, gross beta)
		Dutch Harbor (petroleum)	Chena Slough (sediment	G1
		products)		which is listed for metals (antimony, arsenic, mercury) and Red Devil Creek (antimony, arsenic,
				mercury)
		Iliuliuk /Harbor (petroleum		
		products)		
June 2011		Big Lake <u>(TAH)</u>	Noyes Slough (sediment,	
			petroleum hydrocarbons)	<u>. </u>
	Skagway Harbor		Slate Creek (turbidity)	
	(metals)			
	Pullen Creek (metals)	Egegik River (petroleum	Eyak Lake (petroleum)	Comment [j153]: Is this waterbody located in SC (as shown in the Category 5 List) or IN (as
		products)	products, petroleum	shown here)?
		Chin Con als (a Datum lasses	contamination, sheen)	Formatted: Font: Not Bold
		Ship Creek (pPetroleum products)		Formatted: Font: Not Bold
		Matanuska River (debris)		
June 2012	Katlian River (sediment,	Popof Strait (seafood		
June 2012	turbidity)	waste residue)		
	turorary)	Red Lake/Anton Road	Goldstream Creek	
		Ponds (iron, manganese)	(turbidity)	
		Hood/Spenard Lake	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
		(dissolved oxygen)		
		Cold Bay (petroleum		
		products)		
June 2013		Cottonwood Creek (fecal		
		coliform bacteria)?		
June 2014	Salt Chuck Bay	Little Susitna River	Crooked Creek	
1	(metals: copper)Mine	(petroleum products)	Watershed (turbidity)	
1	Coffman Cove (metals:			

C. TMDL Schedule and Factors

	aluminum, cadmium,		
	copper, iron, lead,		
	mercury, nickel,		
	selenium, zinc)		

Factors Considered in Alaska's 2008 TMDL Schedule Revision

All of Alaska's Category 5 Section 303(d) listed waters for the 2010 Integrated Water Quality Monitoring and Assessment Report are scheduled for development of total maximum daily load (TMDL) between 2010 and 2014. Any Section 303(d) listed waters that is impaired from an active log transfer facility will be subject to a remediation plan in an enforceable permit to meet the water quality goals of the waterbody. The TMDLs for these waterbodies are scheduled based on DEC's consideration of the factors listed below. These factors are not necessarily listed by priority and may be used in conjunction with one another and/or combined with other project management decisions.

- Severity and persistence of pollutant sources, exceedances of water quality standards (WQS) and/or impacts to the beneficial uses of the waterbody
- Significance of the waterbody in terms of public and resource values
- Degree of public, industry, and agency interest in accomplishing the TMDL so that allocations and required controls or permit limits can be known
- Applicability of existing pollution controls, waterbody recovery plans, and NPDES discharge permits.
- Technical feasibility and difficulty of developing the TMDL. Development of some TMDLs requires much more time and resources than for other TMDLs, and agency resources have annual limits of time available for TMDL development. Factors that increase the amount of time include: waterbodies with uncommon types of impairments for which model TMDLs are not available; TMDLs that require complex models and loading calculations; and TMDLs on waters with many stakeholders who will be significantly impacted by loading allocations.
- Availability and accuracy of water quality information necessary for assessing the
 water and making loading determinations. TMDLs for which little data are available
 are scheduled later so that essential data can be acquired.
- Waters where pilot Best Management Practices (BMPs) or other controls are being
 implemented and monitored. TMDL development on these waters may be delayed so
 that improved loading allocations can be made based on the controls' performance.
- Likelihood that proposed restoration efforts might occur in a reasonable time period that, if they occur, may make TMDL development unnecessary
- Stakeholder's development of plans that may satisfactorily substitute for (or supplement) a waterbody's TMDL. Examples include a contaminated site remediation plan or another agency's assessment and restoration plan. TMDL development may be

Comment [j154]: This information does not appear to fit in this location. Suggest deleting it.

Comment [j155]: What do you mean by "applicability"? Does the applicability pertain toward delisting or moving the waterbody from Category 5 to Category 4b?

C. TMDL Schedule and Factors

scheduled to occur shortly after completion of such plans if they will include information that satisfies what is required in the TMDL.

• If multiple TMDLs can be developed as part of a unified effort. These situations include development of TMDLs that address similar pollutants and approaches, waters in the same watershed or area, same stakeholders, and similar restoration actions.

The paragraphs below describe important terms.

TMDL—A total maximum daily load plan is a "pollution budget" designed to restore the health of a waterbody. A TMDL calculates the amount of a specific pollutant that a waterbody can receive and still maintain Alaska's water quality standards.

WQS—The Alaska state water quality standards are guides to help create programs that protect and restore water quality in Alaska. These programs include the impaired water body list and the non-point source pollution program. The standards also help set the limits for state and federal discharge permits and cleanup standards for contaminated sites and landfills.

TMDL loading allocation—A loading allocation is the amount of a pollutant allowed to be discharged into a waterbody at any particular time as part of a TMDL plan for waterbody recovery.

NPDES Permits- National Pollutant Discharge Elimination System (NPDES) limits are created for the amount of discharge a wastewater facility can be released send out into a waterbodythe environment and still maintain Alaska's water quality standards.

Comment [j156]: TMDL is not a waterbody recovery plan unless it includes a TMDL implementation plan.

Comment [j157]: NPDES permits do not include air etc.

APPENDIX D Logic Flow Diagram

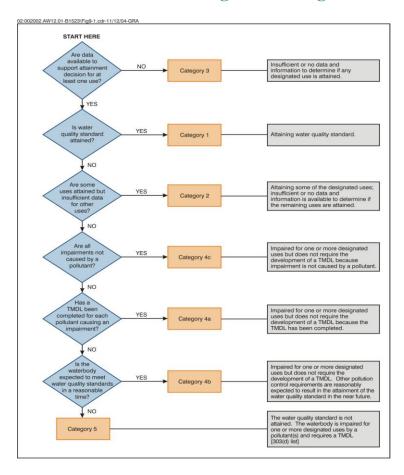


Figure D-1 Logic Flow Diagram for Making Category Determinations

Comment [j158]: Does DEC use Category 4c. If not, then delete this part of the diagram. Category 4b requires more than the waterbody is expected to meet WQS in a reasonable time such as a restoration plan etc,

E. Alaska's List of Category 5/Section 303(d) Impaired Waters

APPENDIX E

List of Alaska's Category 5 Section 303(d) Impaired Waters

NOTE: This appendix is an abbreviated and alphabetical list by Alaska regions of the Category 5/Section 303(d) list of impaired waters. The waters are listed alphabetically by region: Interior (IN), Southcentral (SC), and Southeast (SE).

#	Region	Category	Alaska ID Number	Waterbody	Location	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant	nt [j159]: Missing Alaska ID Numbers
#	Region	Category	Number	waterbody	Location	Concern	Standard	rarameters	for numero	ous waterbodies.
1	Di	Category 5 Section 303(d)	40506.007	Class Bissa	F. J. J.	15	Sediment	S. Parant	in some ca sometimes Urban	nt [j160]: Consider consistency such as uses the specific metals are included and
1	IN	listed	40506-007	Chena River	Fairbanks	15 miles	Sediment	Sediment	Runoff	
2	IN	5 Section 303(d) listed	40506-002	Chena Slough	Fairbanks	13 miles	Sediment	Sediment	Urban Runoff	
3	IN	Category 5 Section 303(d) listed	40402-010	Crooked Creek Bonanza Crooked Deadwood Ketchem Mammoth Mastodon Porcupine	North of Fairbanks	77 miles	Turbidity	Turbidity	Placer Mining	
4	IN	Category 5 Section 303(d) listed	40509-001	Goldstream Creek	Fairbanks	70 miles	Turbidity	Turbidity	Placer Mining	
5	IN	Category 5 Section 303(d) listed		Kuskokwim River	Red Devil		Toxic & Other Deleterious Organic and Inorganic Substances	Antimony, arsenic, mercury	Mining	
							Sediment			
6	IN	Category 5 Section 303(d) listed	40506-003	Noyes Slough	Fairbanks	7 miles	Petroleum Hydrocarbons, Oil & Grease	Sediment, Petroleum Products,	Urban Runoff	

E. Alaska's List of Category 5/Section 303(d) Impaired Waters

#	Region	Category	Alaska ID Number	Waterbody	Location	Area of Concern	Water Quality Standard	Pollutant Parameters	Pollutant Sou Comn	nent [j159]: Missing Alaska ID Numbers
7	IN	Category 5 Section 303(d) listed	, uniox	Red Devil Creek	Red Devil	0.5 mile	Toxic & Other Deleterious Organic and Inorganic Substances	Antimony, arsenic, mercury	for num	nerous waterbodies. nent [j160]: Consider consistency such as a cases the specific metals are included and
8	IN	Category 5 Section 303(d) listed	40510-101	Slate Creek	Denali National Park	2.5 miles	Turbidity	Turbidity	Mining	
9	SC	Category 5 Section 303(d) listed	20505-401	Big Lake	Wasilla	1,250 acres	Petroleum Hydrocarbons	Total Aromatic Hydrocarbons (TAH)	Motorized Watercraft	_
10	SC	Category 5 Section 303(d) listed	30101-500	Cold Bay	King Cove, Alaska Peninsula	0.01 acre	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Military, Fuel Storage	
11	SC	Category 5 Section 303(d) listed	20505-001	Cottonwood Creek	Wasilla	7 miles	Fecal coliform bacteria	Fecal coliform bacteria	Urban Runoff, Urban Development	
12	SC	Category 5 Section 303(d) listed	30401-601	Dutch Harbor	Unalaska Island	0.5 acre	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Industrial, Urban Runoff	
13	SC	Category 5 Section 303(d) listed	30203-001	Egegik River	Egegik	0.25 mile	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Spills, Fuel Tanks, Under- ground Fuel Tanks	
14	SC	Category 5 Section 303(d) listed	20201-401	Eyak Lake	Cordova	50 feet of shore- line	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products, Petroleum Contamination, Sheen	Above Ground Storage Tanks, Spills	_
15	SC	Category 5 Section 303(d) listed	20401-412	Hood/Spenard Lake	Anchorage	307 acres	Dissolved Gas	Low Dissolved Oxygen	Urban Runoff, Industrial	
16	SC	Category 5 Section 303(d) listed	30102-602	Iliuliuk Harbor	Unalaska Island		Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Urban Runoff	

E. Alaska's List of Category 5/Section 303(d) Impaired Waters

							Water					
#	Region	Category	Alaska ID Number	Waterbody	Location	Area of Concern	Quality Standard	Pollutant Parameters	Pollu Sou		[j159]: Missing Alaska I	D Numbers
17	SC	Category 5 Section 303(d) listed		Little Susitna River	Willow	12 miles, RM 15 to RM 27	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Wate	Comment in some cases sometimes	waterbodies. [j160]: Consider consiste s the specific metals are income.	ency such as
18	SC	Category 5 Section 303(d) listed	20402-001	Matanuska River	Palmer	½ mile	Residues	Debris	Lan	1fill		
19	SC	Category 5 Section 303(d) listed	30101-502	Popof Strait	East Aleutians Borough	5 miles	Residues	Seafood Waste Residue	Seaf Proce			
20	SC	Category 5 Section 303(d) listed	30102-409	Red Lake Anton Road Ponds	Kodiak	2.0 acres	Toxic & Other Deleterious Organic and Inorganic Substances	Metals	Urb Rur			
21	SC	Category 5 Section 303(d) listed	20401-020	Ship Creek Glenn Hwy. Bridge. Down to Mouth	Anchorage	11 miles, Glenn Hwy. Bridge. Down to Mouth	Petroleum Hydrocarbons, Oil & Grease	Petroleum Products	Urt Rur			
22	SE	Category 5 Section 303(d) listed		Coffman Cove Creeks – Ten (10) separate creeks	Prince of Wales Island		Toxic & Other Deleterious Organic and Inorganic Substances	aluminum, cadmium, copper, iron, lead, manganese, mercury nickel, selenium, zinc	Ro Constr			
23	SE	Category 5 Section 303(d) listed	10203-002	Katlian River	N. of Sitka, Baranof Island	4.5 miles	Sediment Turbidity	Sediment, Turbidity	Tim Har			
24	SE	Category 5 Section 303(d) listed		Kendrick Creek	Prince of Wales Island		Radioactivity	Radioactivity	Mir	ing		
25	SE	Category 5 Section 303(d) listed	10303-004	Pullen Creek (Lower Mile)	Skagway	Lower mile of Pullen Creek	Toxic & Other Deleterious Organic and Inorganic Substances	Metals	Indus	strial		

E. Alaska's List of Category 5/Section 303(d) Impaired Waters

			Alaska ID			Area of	Water Quality	Pollutant	Pollutant	
#	Region	Category	Number	Waterbody	Location	Concern	Standard	Parameters	Sou Comm	ent [j159]: Missing Alaska ID Numbers
							Toxic & Other		for nun	nerous waterbodies.
		Category					Deleterious		Comm	ent [j160]: Consider consistency such as
		5 Section			Prince of		Organic and		in some	cases the specific metals are included and
		303(d)		Salt Chuck	Wales		Inorganic		sometir	nes
26	SE	listed		Bay	Island		Substances	Metals - copper	Mining	
							Toxic & Other			
		Category					Deleterious			
		5 Section					Organic and			
		303(d)		Skagway			Inorganic			
27	SE	listed	10303-601	Harbor	Skagway	1.0 acre	Substances	Metals	Industrial	

APPENDIX F

Alaska Water Quality Management Programs

Comment [JC161]: May want to include a description and the status of DEC's TMDL program

Description of Ranking Criteria

The ACWA ranking criteria include an identical set of six common factors: (allocation (refers to the extent to which the water has been obligated for various uses), condition, protection, future use, present use, and value. These factors are) applied broadly across each of three components:

Water quantity;

- Water quality; and
- Aquatic habitat.

Each factor is assigned a high (5), medium (3) and lower (1) rating for each of the components.

Application of the Ranking Criteria

Professional agency staff review readily available information and data related to a given waterbody and assign a factor-rating using their best professional judgment for each factor. The agency most knowledgeable and familiar with the data <u>isare</u> responsible for an individual component. For instance, Alaska Department of Natural Resources hydrologists are assigned the responsibility for providing factor-ratings for water quantity, whereas biologists in the Alaska Department of Fish and Game are assigned the responsibility for providing aquatic habitat factor ratings, and DEC is assigned the responsibility for making water quality ratings. Waterbodies are ranked in descending order of their assigned ranking score. Numeric thresholds are established and each waterbody is assigned a high, medium, or lower priority. More detailed information on the ranking process is available online at http://www.dec.state.ak.us/water/acwa/acwa_ranking.htm

Funding Priorities

Funding to support high-priority protection and restoration efforts identified by the ACWA process may come from state agencies such as DEC, DNR, or ADF&G, A single request for proposal is used to publicly solicit grant applications on a competitive basis. Each funding source has a unique set of obligations and conditions for use.

A single, integrated solicitation process that captures the requirements associated with each potential funding sources was developed in 2003. The consolidated solicitation process reduces the burden on applicants by providing a "one-stop shopping" approach to their funding search. It facilitates the project evaluation and award process of the agencies by

Comment [j162]: Define "value" as it is not immediately evident.

Comment [j163]: Also EPA's 319 funds provides additional funding.

providing, in one process, the ability to optimally match projects with the best funding source and provide all information required to make the funding awards. Project evaluations and matches to funding sources are accomplished by an interagency team representing all of the resource management and funding source agencies.

ACWA Priority Actions

ACWA priority water actions (the needed actions on the ACWA-priority waters) are identified for approximately 20 to 30 Alaska's waters on annual basis. Grant funds are made available for these waters. The agencies funded s—Seventeen projects—were funded for actions from July 2009 to June 2010. —Specific information on actions request and grants funded is available at: http://dec.alaska.gov/water/acwa/acwa_index.htm

Alaska Water Monitoring and Assessment Strategy

DEC developed a long-term Water Quality Monitoring and Assessment Strategy (Strategy) to guide its stewardship of Alaska's marine and fresh waters. In 2006, EPA Region 10 completed a review of and accepted the DEC Strategy. The complete document presenting the Strategy, which was completed in June 2005, is available for review at: http://www.dec.state.ak.us/water/wqsar/monitoring/DEC monitoring strategy final 2005. pdf.

The Strategy is intended to <u>tailor meet the federal expectations</u> for state water quality stewardship activities enumerated in the CWA <u>to address in a manner influenced Alaska's</u> unique needs and challenges of Alaska. The Strategy integrates policy and program elements embodied in the ACWA policy and in the EPA's Consolidated Assessment and Listing Methodology and Elements of a State Water Monitoring Program documents. The major policies of the ACWA and EPA define specific objectives for the Strategy from state and federal perspectives.

The purposes of the Strategy document are to (1) serve as a framework for Alaska resource agency decisions required for assessing and monitoring Alaska's water resources; (2) support protection and restoration decisions; and (3) serve as a roadmap for improving state, federal, local, tribal, and public capabilities and performance over time for monitoring the status and trends of Alaska's water resources.

The Strategy focuses on what can be done with available financial resources, with consideration ofing the abundance of Alaska's water resources. Because of this abundance, Alaska must establish priorities for applying limited state resources for monitoring and assessing state water resources. The Strategy touches on waterbody level monitoring through ACWA and ambient analysis through the Alaska Environmental Monitoring and Assessment Program.

Comment [j164]: Provide complete citations and/or website addresses to obtain these document

Comment [j165]: Does EPA and other federal agencies provide funding for monitoring?

Comment [j166]: What is meant by "waterbody level monitoring"?

Comment [j167]: What is meant by "ambient analysis"?

The Strategy is organized around ten elements that must be addressed to ensure that monitoring and assessment activities are conducted on a rational basis and in a manner that ensures information is of good quality and is accessible for resource management decisions. Those elements are as follows:

- Monitoring Program Strategy
- Monitoring Objectives
- Monitoring Design
- Core and Supplemental Water Quality Indicators
- Quality Assurance
- Data Management
- Data Analysis/Assessment
- Reporting
- Programmatic Evaluation
- General Support and Infrastructure Analysis

The Strategy enables DEC to revise monitoring programs based on emerging needs. For example, the monitoring programs can be adapted to evaluate the impact of global changes on Alaska waters. DEC recognizes that sources external to Alaska may affect water quality. Information or direction from the Alaska Climate Change Task Force (http://www.climatechange.alaska.gov/) can be incorporated future waterbody assessments and listing methodologies. The Task Force has direct responsibility for a host of climate change impacts, including the assessment of warming estuaries and fresh water habitat that support fisheries. The Task Force also intends to seek funding for an ocean acidification research and monitoring plan.

In 2006, EPA Region 10 completed a review of and accepted the DEC Strategy.

Alaska's Aquatic Resource Surveys - Probabilistic Assessments

Probability-based assessments are part of the DEC Water Quality Monitoring and Assessment Strategy. Seven regional probabilistic assessments of fresh water and marine aquatic resources (Figure F-1) have been conducted since 2002. The discussion below addresses the 2002 Southcentral Ceoastal, Tanana River Basin and Interior Alaska wadeable stream assessments, for which final reports have been completed. The full reports are available at http://www.dec.state.ak.us/water/wqsar/monitoring/emap_Map.htm and in the EPA National Coastal Condition Report III (2008). Field surveys have been completed on the Yukon River (2009), Cook Inlet Lakes (2008), Coastal Aleutian Islands (2006 and 2007), and Coastal Southeast Alaska (2004). Results of these surveys are not yet available for inclusion in the 2010 report.

Comment [j168]: Who conducted these assessments? DEC? EPA?



Because of the low population density and limited industrial and agricultural activities that characterize the state, Alaska's aquatic resources are often assumed to be in pristine or near-pristine condition. However, long-range atmospheric and oceanic transport from the more populated and industrialized centers are delivering contaminants to Alaska. The assessments described above reported on in this appendix utilized "core national indicators" as part of the EPA National Aquatic Resource Survey program. Currently, the core indicators and sampling design used in Alaska are not designed to assess condition of aquatic resources related to accumulation of contaminants at the trophic level of the food web nor climate change impacts, such as ocean acidification.

Southcentral Alaska Coastal Survey

DECThe Department collected data at a total of 55 sites that covered the geographic range from Unimak Island in the southwest study area to the Copper River Delta area in the northeast study area. The target study area included coastal bays and estuaries in Southcentral Alaska, including the Alaska Peninsula, Kodiak Island Aerchipelago, Cook Inlet, the Kenai Peninsula, and Prince William Sound.

Using the core indicators of the EPA National Coastal Assessment (NCA), DEC? sampled 55 locations as part of the Southcentral Alaska coastal assessment, utilizing the core indicators of the EPA National Coastal Assessment (NCA) sampled 55 locations. Based on three of the NCA indices (water quality, sediment quality, and fish tissue contaminants), the overall condition was rated good. National indices indicating poor conditions for water clarity at some sites did not account for conditions natural to this region, i.e. glacial flour. High levels of chromium and nickel were found at one site near Chrome Bay, for which a

Comment [j169]: Who did the sampling?

Comment [j170]: Who made the determination that the condition was good?

subsequent assessment was conducted in 2009 (results pending) to determine if these results represent the natural condition. Because of the lack of current and historical biological data, it was not possible to assess appropriate benthic or coastal habitat indices for this region. The percentage of coastal area in good, fair, poor, and missing categories for each NCA index and component indicator is shown in the report, which is available at: http://www.dec.state.ak.us/water/wqsar/Docs/EMAPSC2%20Report.pdf.

Tanana River

The Tanana River originates in the Yukon Territory, Canada, flows west, and discharges into the Yukon River near Tanana, Alaska (fig. 1). The basin covers more than 116,000 km2 and lies south of the Yukon River where discontinuous permafrost has been thawing in recent decades (Jorgenson and others, 2001).

DECThe Department collected water-quality data from 84 sites along the navigable rivers in the Tanatna Basin from October 2003 through September 2006 as part of a cooperative study between the U.S. Geological Survey (USGS) and DECAlaska Department of Environmental Conservation (ADEC) Alaska Monitoring and Assessment Program (AKMAP). A broad range of chemical analyses were conducted for 93 sets of samples collected at 59 tributaries to the Tanana River and at 25 locations along the mainstem. *Insitu* pH, specific conductance, water temperature and dissolved-oxygen concentrations were measured and samples were analyzed for major ions, dissolved organic carbon, and oxygen isotopes.

The report for the Tanana River Basin Survey can be found at http://www.dec.state.ak.us/water/wqsar/Docs/USGS ofr20071390.pdf. This report contains the field water-quality constituents and water-quality data analyzed by the USGS from October 2003 to September 2006.

Alaska Interior Wadeable Stream Assessment

The Alaska Interior Wadeable Streams Assessment summarizes field data collected during 2004 and 2005 as part of a study designed to assess the ecological condition of wadeable, perennial streams in the Tanana River basin, interior Alaska. This project was conducted in conjunction with the EPA's Wadeable Streams Assessment (WSA). Funded by EPA, the Alaska WSA study was a cooperative effort among EPA, DEC, the Environment and Natural Resources Institute (ENRI) of the University of Alaska Anchorage, the School of Fisheries and Ocean Sciences of the University of Alaska Fairbanks, and the U.S. Geological Survey (USGS). Fresh water indices (water quality, sediment, and biological conditions) are included. Forty-two Tanana River Basin streams were analyzed, representing 12,478 kilometers of stream.

Although <u>EPA did not include</u> information from this assessment <u>were not included</u> in the national EPA report, Alaska produced a report summarizing the <u>findings</u>. <u>Fresh water</u>

Comment [j171]: Who conducted these analyses? DEC?

Comment [j172]: Why did EPA not include AK's findings in the National Report?

indices (water quality, sediment, and biological conditions) are included. Forty two Tanana River Basin streams were analyzed, representing 12,478 kilometers of stream.

The report is available at:

http://www.dec.state.ak.us/water/wqsar/monitoring/Tanana Wadeable Str Rep Final.pdf. The report contains sSummaries are presented of the most important physical, chemical, habitat, and biological metrics and a discussion of the p. Preliminary modeling results designed to of a modeling approach for helhelping detect and diagnose changes in ecological condition at stream sites based on deviations from predicted macroinvertebrate functional feeding group composition is discussed.

Nonpoint Source Pollution Program

Because much of Alaska is undeveloped and relatively pristine, the primary emphasis of the nonpoint source pollution strategy is prevention. In populated areas, however, many waterbodies, including important salmon streams, have been degraded and need restoration. Alaska develops and implements wwaterbody restoration plans are developed and implemented for waterbody locations where water quality is impaired. Restoration plansstrategies for polluted waterbodies consider the entire watershed and include measures to control the sources of pollution to prevent future degradation. Alaska designs restoration activities are designed to achieve a water quality condition appropriate to the specific site.

Nine key elements have been identified by EPA as necessary for an effective nonpoint source program in Alaska:

- <u>SExplicit s</u>hort- and long-term goals, objectives, and strategies to protect surface and groundwater
- Strong working partnerships and links to appropriate state, tribal, regional, and local entities (including conservation districts), private-sector groups, citizens' groups, and federal agencies
- A balanced approach that emphasizes both statewide nonpoint source programs
 designed to protect watersheds and to conduct on-the-ground
 restorationmanagement of watersheds with impaired or threatened here-waters
 are impaired and threatened
- Abatement of known water quality impairments resulting from nonpoint source pollution and prevention of significant threats to water quality from present and future activities

Comment [j173]: Is this really true? From my observations, the TMDLs and associated recommendations or 4b restoration plans tend to focus on the impairments only.

F. Alaska Water Quality Management Programs

- Identification of waters and watersheds impaired by nonpoint source pollution and important unimpaired waters that are threatened or otherwise at risk.
 Alaska's Nonpoint Source Water Pollution Program includes a process of progressively addressing these waters by conducting more detailed watershed assessments, developing watershed/waterbody implementation plans, and implementing those plans.
- IReview, upgrades, and implementation of all program components and establishment of flexible, targeted, and iterative approaches to achieve and maintain beneficial uses of water, including (1) a mix of programs based on water quality, technology, or both; (2) a mix of regulatory, non-regulatory, financial, and technical assistance as needed to achieve and maintain beneficial uses of water; and (3) incorporation of or cross references to existing baseline requirements established by other relevant federal or state laws.
- Identification of federal lands management and activities that are not managed consistently with the objectives of Alaska's nonpoint source program
- Efficient and effective program management, including necessary financial management
- Periodic review and evaluation using environmental and functional measures of success in which sources of nonpoint source pollution are assessed and the management program is revised at least every 5 years

These nine key elements have been incorporated and integrated with ACWA policy in the Alaska Nonpoint Source Water Pollution Control Strategy. This strategy is available at http://www.dec.state.ak.us/water/wnpspc/pdfs/2007_NPSStrategy.pdf. The following general sources of nonpoint source pollution are addressed:

- Urban and community development
- Forest practices
- Harbors and marinas
- Hydromodification
- Mining
- Agriculture
- Wetlands classification and management
- Road, highways, and bridges

DEC reports on the Alaska's progress towards meeting the goals, objectives and milestones of this strategy to EPA on an annual basis. This report is one of the key documents that help EPA determine whether Alaska is making satisfactory progress on its NPS program and whether to continue to provide CWA Section 319 funding to Alaska's NPS programs.

Comment [JC174]: What is meant by important? Who makes the decision on which unimpaired waters are "important"?

Comment [j175]: Is this true on most watersheds with impaired waters? Are you defining TMDLs as watershed plans? If so, this is not a true representation of TMDLs.

Comment [JC176]: All program components of

Comment [j177]: Is this bullet referring to revisions to Alaska's NPS Strategy?

Comment [JC178]: How are ACWA and "the nine key elements" integrated? What role does ACWA play in "the nine elements"

Maintenance of good water quality can only be achieved when all sources of pollution are considered, resources are used for the highest priorities, and people work together to prevent pollution and achieve clean water goals. Integration of the nine key program elements listed above with the ACWA priorities ensures that stewardship and prevention, monitoring and, when necessary, restoration actions are implemented.

Coastal Nonpoint Source Pollution

Congress established the Coast Nonpoint Program under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA). The program builds upon existing state coastal management and water quality programs by applying a consistent set of economically achieveable management measures to prevent and mitigate runoff pollution problems. Designed to comply wit Section 6217 of CZARA, Alaska's coastal nonpoint source program is a comprehensive approach that recognizes that land-use activities in coastal watersheds have impacts on estuaries, beaches, marine resources and the ocean.

Alaska published Alaska Coastal Clean Water Plan (ACCWP), as a Public Review Draft in August 1995. Both this plan and Alaska's Nonpoint Source Water Pollution Control Strategy (2007) Strategies for nonpoint water pollution control include implementation of the Alaska Coastal Clean Water Plan, recently publishes as a Public Review Draft in August 1995, and the requirements of the Coastal Zone Act Reauthorization Amendments (CZARA) (Section 6217). incorporate management measures to address land-based sources of runoff from agriculture, forestry, urban development, marinas, hydromodification (stream channelization, and the loss of wetlands and riparian areas.

Alaska implements the ACCWP and Alaska's Nonpoint Source Water Pollution Control Strategy (2007) through a variety of implementation tools, including rules, ordinances, voluntary approaches, educational campaigns and financial incentives and backed up by enforceable policies and mechanisms.

Most management measures of CZARA Section 6217 are implemented through existing state programs and authorities, including the following:

- State certification of federal permits and activities that water quality standards will be met
- Fish habitat protection
- Water rights appropriations
- Alaska Coastal and Harbor Design Procedures Manual
- Harbor management agreements
- Forest Resources and Practices Act
- Regulations and erosion and sediment control plans for dam construction

The management measures are intended to ensure appropriate protection occurs during the efficient use of resources.

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Comment [j179]: When does DEC plan to finalize this document which is now nearly 15 years old

Comment [j180]: When does DEC plan to finalize this document which is now nearly 15 years old

Comment [j181]: Is this the place to include the status of AK's 6217 with respect to EPA's full approval and Alaska's recent development of the stormwater manual. Also may want to include a citation to website.

BEACH Grant Program

The goal of the Alaska BEACH Grant Program is to provide funding that helps Alaskan communities monitor the state's marine beaches for feeal-bacterial pollution.

DEC surveyed Alaska coastal communities and found that some beaches <u>are</u> more likely to have a higher level of bacterial contamination than others. To learn more about the extent of possible sources of the presence of fecal coliform bacteria or enterococci bacteria, DEC has entered into an agreement or Memorandum of Understanding (MOU) with several coastal communities that will be able to apply for BEACH Grant funding. These cooperating communities will work with DEC for water quality monitoring, community notification, and training.

Identification of Alaska Beaches

The DEC BEACH Grant Program defines a beach as "any shoreline where recreational activities may bring a person into complete or partial body contact with marine water." According to this definition, a beach may include sections of a shoreline that do not appear to look like a sandy beach.

A Recreational Beach Survey was performed in 2003 to gather information from coastal communities about the recreational use of beaches in their areas. The 60 responses received identified 203 recreational-use beaches as areas that were used for recreational purposes. These beaches were located in 53 coastal Alaska communities.

Current Status of the Alaska BEACH Program

DEC funds monitoring and development of phases of the BEACH program by local communities and tribal governments through the ACWA/BEACH grant process. Communities (including Dillingham, Haines, Juneau, Naknek and Homer) have monitored local recreational beaches for indicator bacteria using funding from the Alaska BEACH Grant Program since summer 2007. The program supports monitoring of marine water quality adjacent to high-use beaches. Grantees sample beach water for organisms (fecal coliforms and enterococci bacteria) that indicate the presence of fecal contamination.

Funding for beach monitoring will be made available through the ACWA/BEACH Grant process to communities with high priority beaches.—More information about the Alaska BEACH Grant program is available at:

http://www.dec.state.ak.us/water/wqsar/wqs/beachprogram.htm

Point Source Pollution Program

Overall Approach

DEC's point source pollution program covers more than 1,000 permitted facilities and activities throughout the State of Alaska. DEC's overall approach to water quality

Comment [JC182]: Is there a website where the reader can find out the results of this survey including the names of the 203 beachs? If so, please include that information.

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management is to focus staff resources on facilities and activities that pose higher risks to public health or the environment. Five broad categories of effort are under way:

Comment [JC183]: May want to list the categories and note additional information on each category is discussed below.

Improving Regulatory Oversight

Staff focus on improving and updating permits for facilities and activities that pose a higher risk to human health or the environment by working on APDES and federal NPDES individual permits for all large-volume, major dischargers, and by using new or reissued general permits that standardize the review of similar or lower risk projects. DEC also regulates domestic wastewater treatment facilities not permitted by the EPA. These facilities are required to obtain a state but nevertheless need a state discharge permit and are important to the human health in smaller Alaskan communities. Finally, DEC prioritizes facilities to be-inspected on through the use of a risk-based scoring and ranking model that incorporates as well as national EPA priorities.

Enhancing Compliance

DEC staff, who have extensive experience with a wide variety of local conditions and waste treatment technologies, review aA facility's compliance with effluent limits and operational conditions designed to protect water quality. is enhanced by assistance by DEC staff, who have extensive experience with a wide variety of local conditions and waste treatment technologies. DEC staff conduct rRoutine review of monitoring records submitted to DEC and follow-up as needed in order to also yield incremental improvements in the ambient water quality of Alaskan waters.

Providing Technical Information

Trained and technically competent staff are accessible, through various telecommunication tools that bridge Alaskan-sized distances, to provide assistance to permittees and their consultants to provide technical assistance and to be a resource for information about successful wastewater treatment/discharge technology and practices.

Streamlining the Permitting Process

One of DEC's priorities is to Compliance is facilitated by streamlined the application, fee payment, and electronic reporting. P; permit conditions that focus on cost-effective practices gleaned from statewide experience. DEC pays; and consistent attention across industry sectors on pollutants of concern. DEC's Also, a modern data system provides an analytical tool to support improvements in other aspects of DEC's water quality program, includinge.g., improvements to Alaska's water quality standards.

<u>DEC's</u>The department's overall goal with respect to point source pollution in Alaska is to protect and improve ambient water quality through a focused effort that tackles the higher-

risk discharges and seeks to make steady, incremental, and cost-effective improvements to wastewater treatment and release practices.

Subsurface Wastewater Protection

DEC weastewater engineers review plans for on-site wastewater systems (septic systems), wastewater lagoons, and underground injection control (UIC) wells (specifically, EPA Class V injection wells). Underground disposal systems and injection wells can pose a threat to groundwater quality, and impact drinking water sources. Common examples in Alaska are sumps, drains, drywells, and drainfields that are used to dispose of septic tank effluent, storm water, snowmelt and commercial wastewater. Contaminants associated with injection wells can include nutrients, bacteria, viruses, solvents, anti-freeze, used oil, and dissolved heavy metals. These pollutants can degrade-groundwater aquifers that serve as public or private drinking water systems well. DEC reviews ensure that domestic wastewater (septage and sewage) is properly treated, stored, handled, and disposed of in a safe and sanitary manner. Poorly designed systems can also cause groundwater to migrate to and pollute surface waters, especially in areas with a high water table or near tidally-influenced waterbodies.

DECepartment engineers also review- and approve plans for the design and construction of domestic and commercial wastewater treatment, storage, and disposal facilities. Staff also review monitoring reports for treated wastewater discharges to the surface of the land or into the ground that may affect the groundwater. Information from the domestic wastewater program is used to create maps that show the location of septic systems, identified UIC wells, wastewater treatment systems, and sewage lagoons (through when completing public water system source water assessments for the drinking water protection program——(see Drinking Water section below).

Storm water

Storm water discharges are generated by runoff from land and impervious areas, such as paved streets, parking lots, and building rooftops during rainfall and snow. This runoff often contains pollutants in quantities that could adversely affect water quality.

<u>EPA awarded DEC aAuthority</u> to administer the Storm Water Program transferred to the department on October 31, 2009. <u>DECThe department</u>'s point source storm water program focus is twofold: storm water that is subject to APDES permitting requirements and storm water handled by treatment and discharge systems.

Storm water discharges that require an APDES permit include discharges from constructions sites disturbing one or more acre of land, certain industrial facilities, and municipal separate storm water sewer systems (MS4) in the Anchorage and Fairbanks areas. APDES storm water permits require proper site control and rainfall and snowmelt. Runoff is treated and-contact with pollutants is prevented with good site design and construction.

Under 18 AAC 72.600, <u>DEC staff the department</u> reviews and approves engineering plans for storm water treatment and discharge systems. The goal of this reviews <u>is</u>-to ensure that permanent storm water systems are designed and constructed to meet pollutant removal criteria and best management practices (BMPs).

Commercial Passenger Vessel Environmental Compliance Program

In 2001, Alaska passed an innovative pollution prevention law that applies to passenger vessels, including some Alaska Marine Highway System vessels. The law is applicable for both small passenger vessels, serving 5- to 249 people, and large passenger vessels, serving 250 or more. The Commercial Passenger Vessel Environmental Compliance Program (Cruise Ship Program) implements the law and ensures that cruise ships and ferries comply with wastewater effluent and visible emission standards. Effluent limits are set for both graywater (e.g., water from showers, dishwaters, etc.) and blackwater (e.g., toilet water).

AK's Legislature Theremade have been two changes to the original law. In 2004, the Legislature revised the law that applied to small passenger vessels. It allowed small passenger vessels to implement BMPsest Management Practices to manage their wastewater discharge, for example, discharging only while underway. In August 2006, the voters approved a citizen-sponsored cruise ship ballot initiative. The new law requires that cruise ships obtain wastewater permits in order to discharge. It also requires that observers—Ocean Rangers—be placed on board cruise vessels while in Alaska waters. The Cruise Ship Program is in the process of issuing a wastewater discharge general permit. DEC is also in the process of hiring a contractor to place Ocean Rangers on board ships during the 2010 cruise season.

The Cruise Ship Program also-conducts scientific research to assess the impact of cruise ship wastewater on Alaska-'s environment. AK-and may create additional standards if science and technology warrant. The state law also addresses the offloading or disposal of nonhazardous solid wastes (besides sewage) and hazardous wastes in Alaska. Vessel owner/operators are required to annually submit a description of the vessel procedures for handling nonhazardous and hazardous waste and to report any deviations from the vessel plan to DEC. The Cruise Ship Program is supported by industry fees.

Drinking Water Program

The Drinking Water Program consists of four interrelated sections charged with oversight of public water systems (PWSs). The sections and additional areas of responsibility are identified below:

- Engineering
- Compliance and Monitoring—PWS Compliance and Enforcement activities

Comment [JC184]: If you have a website that provide more detailed information on this program, please include it in this section. Also may want to include information on AK's the new Stormwater manual.

- Statewide Technical Services—Drinking Water Protection, Alaska PWS Database, PWS Security and Emergency Response planning, and statewide PWS Compliance and Enforcement coordination
- Program Management and Administration

Public Water System and Drinking Water Compliance

Staff in the Compliance and Monitoring, Engineering, and Statewide Technical Services sections conduct primarily compose the Drinking Water Program's compliance and enforcement activities are referred to as the Public Water System Supervision (PWSS) Program. The Alaska PWSS Program focuses PWSs that are federally regulated, which are systems that provide drinking water to 25 or more individuals and do not include single-family homes or duplexes with their own private wells. Alaska has approximately 1,570 federally regulated PWSs, according to an October 1, 2009, inventory. This inventory figure is dynamic, changing frequently in the course of a year. Some PWSs are seasonal, shutting down for 6 to 9 months of the year. In addition, many systems are slowly going out of business, disbanding, or being consolidated into larger systems, and many small community-type systems are starting up in the areas of rapid growth, such as the Matanuska-Susitna Valley.

Both the State of Alaska and the federal government classify PWSs based on population served and duration of operation, regardless of whether the drinking water source is ground water or surface water. The federal (EPA) classifications for PWSs are Community Water System (CWS), Non-transient Non-community Water System (NTNCWS), and Transient Non-community Water Systems (TNCWS). The State of Alaska adopted the federal nomenclature for PWS classification effective April 2009. Alaska's October 2009 PWS inventory shows 436 CWS, 245 NTNCWS, and 892 TNCWS.

Alaska is a primacy state for drinking water and has direct oversight of Alaskan PWSs within the state. As a primacy state, Alaska is required to implement the state PWSS Program to meet the intent and requirements of the Safe Drinking Water Act (SDWA) and its 1986 and 1996 amendments. Alaska The state is required to complete the timely development or adoption of federal drinking water rules and obtain and maintain primacy for all drinking water rules and required drinking water initiatives. As a primacy state, Alaska is required to implement the state PWSS Program to meet the intent and requirements of the Safe Drinking Water Act (SDWA) and its 1986 and 1996 amendments.

The Alaska PWSS Program does not create, measure, or develop data. Rather, it provides for collection of information routinely sent directly to the Drinking Water Program staff. The information collected and the responsible parties are identified below:

- PWS compliance monitoring data, prepared by DEC-certified laboratories
- Operator reports, provided by PWS owners or operators
- Sanitary survey inspector reports, prepared by DEC Drinking Water Program engineering staff and DEC-certified sanitary survey inspectors

Drinking Water Program engineering staff also complete component assessments of onsite water system status and comprehensive performance evaluations of Alaska PWSs to confirm that systems were built as approved and to provide information to PWS owners to better optimize system performance. Staff review and either approve or disapprove the engineered plans for PWS treatment, storage, and distribution systems. The program requires that PWSs produce treated water that meets the standards set by federal rules and state regulations for the regulated drinking water contaminants. The program receives, stores, and uses monitoring data on PWS compliance for the regulated drinking water contaminants as well as any specific rule requirements to confirm that the health of the customers being served by a PWS is protected. The program requires that PWSs be in compliance with SDWA requirements, federal rules, and state regulations at all times. If a PWS is in noncompliance, Drinking Water Program staff provide technical and compliance assistance. The staff also takes appropriate enforcement actions or may refer the PWS to EPA for enforcement.

DEC provided aAll PWS location data for Alaska's federally regulated PWSs was provided to the EPA approximately 4 years ago. Alaska PWS location data for new systems and existing treatment systems, wellhead (ground water source), and intake (surface water source) is routinely checked during the sanitary survey process. Any changes in location data are corrected in the state database for the PWS Safe Drinking Water Information System (SDWIS) which is named SDWIS/State. DEC reports aAll routine data for federally regulated PWSs are reported to EPA during monthly or quarterly data transfers. This information includes the State of Alaska PWS inventory, source types, population served, latitude and longitude of new treatment systems and source intakes or updated information from existing systems, compliance monitoring data, enforcement actions, and operator reports.

<u>DEC</u> <u>Alaska is also required to-submits</u> to EPA an annual public water system compliance report for its PWSS Program. First submitted in 1996, the annual compliance report must be submitted to EPA by July 1 of each year for the previous calendar year, unless designated otherwise by EPA.

Drinking Water Protection

The Drinking Water Protection (DWP) component of the statewide Drinking Water Program ultimately focuses on the assessment of water supplies used by Alaska PWSs for drinking water purposes and the protection of ground water supplies used by public drinking water systems. Through an extensive public involvement process, Alaska developed its Drinking Water Protection Program, a combined Source Water Assessments and Wellhead Protection Program for PWS, which EPA was approved by EPA on April 4, 2000. This component of the statewide DWP combines activities and information from PWS source water assessments and Wellhead Protection Management Plans (WPMPs), and focuses on the protection of drinking water produced and distributed by PWSs that use surface water, ground water, or combined sources.

Comment [JC185]: What does this mean? What are specific rules? Can you give an example?

Comment [JC186]: What is meant by "transfers"?

DEC completed The initial project to complete 1,668 source water assessments of for 1,427 Alaska PWSs-has been completed. A total of 1,668 source water assessments were completed for 1,427 PWSs. Currently, DEC completes source water assessments for new PWSs are being completed after the system is built and inventory information is entereddocumented in SDWIS/State. Since July 1, 2004 (the EPA deadline for completion of PWS source water assessments for existing systems by primacy states), and as of October 2009, DEC completed 257 new PWS source water assessments have been completed. DEC also completed tThe following also have been completed: 361 PWS delineations, 281 contaminant source inventories, and 280 vulnerability analyses. The source water assessment process includes identifying source water (drinking water) protection areas using a series of uniform flow equations and watershed delineations; completing a contaminant source inventory of all potential and existing sources of regulated drinking water contaminants within the protection areas; and completing a vulnerability assessment based on the level of risk associated with identified potential and existing contaminant sources. The goal of completing PWS source water assessments is to identify and prioritize contaminant risks to public water supplies as a basis for protection efforts. These protection efforts will be largely undertaken at a local level and will be supported by the state through possible regulations, guidance documents, fact sheets, and Wellhead Protection Program activities. Alaska will use tThe source water assessments will also be a crucial tool for use by the state to assistin assisting PWS operators and owners of PWSs in achieving compliance with the EPA Ground Water Rule, promulgated November 8, 2006.

During fiscal year 2004, DEC developed and produced an interactive CD-ROM was developed and produced for PWS owners, managers, operators, and communities to use to develop their WPMPs. The CD directs the users through the information entry process with easy-to-use methodology and easy-to-understand instructions. The end product is a written wellhead protection plan specifically designed for a particular public drinking water system or local community. The completed source water assessment report and the most recent sanitary survey are then added as appendices to the plan, resulting in a complete and comprehensive WPMP for the system.

DWP staff have continue to d further development and implementation of a statewide voluntary Public Water System Wellhead Protection Program. To accomplish this goal, DWP staff assisted communities and PWS owners and operators in developing WPMPs for their systems through the use of the interactive CD-ROM (previously described). Community support is essential for an effective local Wellhead Protection Program, which includes development and implementation of a WPMP. DWP staff and completed public outreach through workshops and presentations on wellhead protection tools and strategies. Additionally, DWP staff assisted the Alaska Rural Water Association (ARWA) Source Water Protection Specialist in presenting joint workshops on both PWS wellhead protection and source water protection planning. Community support is essential for an effective local Wellhead Protection Program, which includes development and implementation of a WPMP.

Comment [JC187]: Define protection area.

Comment [JC188]: Who developed this CD-ROM—EPA or DEC?

The Wellhead Protection Advisory Committee recommended to the State of Alaska, DEC Drinking Water Program, that the statewide voluntary Public Water System Wellhead Protection Program be renamed the "Drinking Water Protection Advisory Committee." The advisory committee recommended and approved the creation of "Endorsed Drinking Water Protection Plans" and redefined the definition of "substantial implementation," a term used by EPA to measure protection strategies that minimize the risk of contamination of a source of drinking water. The Committee's A list of these recommendations can be reviewed on the Drinking Water Program website: http://www.dec.state.ak.us/eh/dw/DWP/WAC.htm

As of To date (October 2009), 32 PWSs have substantially implemented a Drinking Water Protection Plan. These 32 PWS provide drinking water to 338,735 consumers. More than 50% of the people receiving water from a PWS, receive water from systems with a substantially protected source of drinking water.

Criteria for the Endorsed Drinking Water Protection Plans were established in conjunction with the Alaska Rural Water Association (ARWA) criteria for the development of protection plans for which ARWA assists communities with development. As of To date (October 2009), ten water systems have Endorsed Drinking Water Protection Plans. DEC hopes It is hoped that new fiscal incentives from the ACWA grant program will help facilitate the development of Endorsed Drinking Water Protection Plans. DWP staff continues to work toward identifying the communities that are currently implementing protection strategies. DEC will recognize the communities that are implementing protection strategies and these communities will be recognized and may qualify for future incentives. In the meantime, DWP staff focus their efforts on communities that do have protection strategies in place.

In State Fiscal Year (SFY) 2009, the Drinking Water Protection Group collaborated with the ACWA grant program which. This grant program is a multi-agency effort involving DEC, Alaska Department of Natural Resources and Alaska Department of Fish and Game. The DEC Drinking Water Program, Drinking Water Protection Group, contributed \$10,000 from the Drinking Water State Revolving Fund (DWSRF), Local Assistance, and Other State Programs. -These funds are to be used toward proposals that promote and/or develop stewardship strategies leading to increased protection of water sources used for public drinking water supplies. DEC awarded tThe first grant, which also incorporated CWA funding, was awarded to Friends of Mat-Su for SFY 2010 for . Funding this project allows Friends of Mat Su to develop an educational outreach program for homes and businesses around Lake Wasilla (-, where more than 20 PWS wells are located within 2,000 feet of the lake . Education outreach is expected to focus on key issues of septic system location and maintenance, proper well construction, well abandonment procedures, and waste disposal wells for Class V motor vehicles. In the future, the grant program will be used to assist community PWSs develop and or implement DEC Endorsed Drinking Water Protection Plans.

Comment [JC189]: Who established this criteria?

F. Alaska Water Quality Management Programs

Vulnerability assessments of public water supplies, which are part of the source water assessment process, can serve as a foundation for comprehensive management and protection of Alaska's ground water resources. In addition, they can assist a PWS owner using a ground water source to achieve and maintain compliance with the Ground Water Rule and can support future commercial and industrial growth. Information gathered and generated during the initial years of the source water assessment program for public water supplies can be used to enhance the protection of lakes, rivers, and streams in populated areas by validating or improving on the total maximum daily load (TMDL) values used to issue permits to discharge wastes. This information can support source assessment phase of TMDL development which can include the following activities: also be used to establish TMDLs to manage the discharge of wastes to aquifers; identify critical solesource aquifers used as a drinking water supply by a PWS; identify any areas of declining ground water levels or degrading ground water quality; and perform unified watershed assessments statewide.

Efforts to Protect Ground Water: Protection of Alaska's ground water is largely accomplished through the regulation of contaminated sites, storage tanks, spill response, and specific waste disposal activities under state and federal programs. DEC manages several programs that contribute to the protection of ground water, including the following: Contaminated Sites, Storage Tank, Prevention & Emergency Response, Industry Preparedness & Pipeline, Solid Waste, Pesticides, Drinking Water, Wastewater, Watershed Development, Water Quality Protection, and Community Assistance & Information. Additionally, ARWA staff, the EPA Underground Injection Control Program, and several other-important EPA programs promote the protection of ground water quality in Alaska.

Wetlands

The National Wetlands Inventory of the U.S. Fish and Wildlife Service estimates that the State of Alaska contains includes 63% of the nation's wetland ecosystems. Activities in these wetlands and their associated waters are regulated under federal and state law and local ordinances. T-because these ecosystems have been shown to perform vital and valuable physical, chemical, and biological functions. Alaska's wetlands function to support the state's diverse human communities, fish and wildlife populations, water resources, and economy.

Wetland Trends

Alaska's has 174,683,900 acres of wetlands compose approximately 43% of the surface area of the state. By comparison, the entire remainder of the United States contains 103 million acres of wetlands, representing approximately 5% of the nation's surface area. About half of all Colonial-era wetland acreage in the lower 48 states has been converted to agriculture, development, or other land uses. Although there is no statistically reliable data on statewide wetland losses, the U.S. Fish and Wildlife Service estimates that Alaska has lost 200,000 acres, or less than 1% of the state's original wetland acreage.

Comment [JC190]: Can you elaborate on the specific functions of wetlands?

Alaska's Final 2008 Integrated Report

F. Alaska Water Quality Management Programs

In urbanized and developed areas of Alaska, such as Anchorage, more than 50% of the wetlands have been developed. Significant percentages of wetlands in other urbanized areas. including Juneau, Fairbanks, the Matanuska-Susitna Valley, and the North Slope, have been lost or impacted. Because there is a strong correlation between waterbodies that are listed as impaired by DEC and areas where wetlands have been impacted or developed, wetlands need restoration and mitigation of impacts associated with development.

Wetlands also need protection. Specifically, wetland functions need to be maintained to enhance or protect water quality for drinking water, spawning, and other uses.

DEC and other cooperating agencies and organizations selected the hydrogeomorphic approach was selected by DEC and other cooperating agencies and organizations because it offers a rapid and reference-based method of assessment that allows users to recognize human-induced changes in the functions of wetland ecosystems. Guidebooks have been developed to implement the hydrogeomorphic approach to assessment and management of wetlands in various regions of Alaska. Table F-3 identifies areas for which the use of guidebooks has provided an assessment tool to begin or complete wetland permitting and planning activity.

Assistance to Local Government and Native Organizations

DEC provides statewide technical assistance to local governments for permitting issues and wetland planning. <u>USACE delegated t</u>Three local governments <u>have delegated authority from the USACE</u> to manage their wetlands. Several other communities (such as the Ketchikan Gateway Borough and the City of Wrangell) are proposing new wetland planning. DEC is also assisting the City and Borough of Juneau in developing a Wetlands Mitigation Bank. In 2004, DEC, along with federal agencies, successfully helped the Sealaska Native Corporation develop a private mitigation bank.

Tribal Organization Assistance with Wetland Management

DEC assists tribal organizations with wetland and watershed planning. DEC# has helped develop wetland work plans with a sound scientific foundation, guided by the wetland assessment guidebooks.

Wetland Mitigation Banking

DEC participated in developing the Southeast Alaska Regional Mitigation Banking Instrument of Sealaska Corporation. In another wetland mitigation banking effort, T the Matanuska – Susitna Borough in collaboration with a private contractor has begun developing a mitigation bank for the Matanuska-Susitna Borough. DEC participated in the initial meetings and provides technical assistance to the Mitigation Banking Review Team for the wetland functional assessment aspects of the bank.

Comment [JC191]: Just because there is a correlation does not mean welands need restoration and mitigation of impacts—need a better rationale for making this conclusion.

Comment [JC192]: Explain how wetlands enhance water quality more explicitly.

Comment [JC193]: Who developed the guidebooks?

Comment [JC194]: Define or elaborate on "wetland mitigation bank"

APPENDIX G

Interpretation of the Residues Criterion in Alaska Water Quality Standards for Use in Attainment and Impairment Determinations

RESIDUE CRITERIA

Alaska's water quality standard for residues is described in 18 AAC 70.020(b).

The residue standard applies to any residue discharge (whether permitted or unpermitted); however, one of the most prevalent applications of the residues standard is to permitted discharges of residues in marine waters from seafood processing and log transfer facilities, and the authorization of zones of deposit for these permits.

Alaska has an explicit provision within its water quality standards that allows for the authorization of ZODs for residues in 18 AAC 70. 210.

Seafood processing facilities and log transfer facilities in Alaska are typically issued ZODs in such a facility's permit for the residues discharges. Seafood processing facilities are generally issued a one acre ZOD and log transfer facilities are issued a "project area" ZOD. Additionally, it is important to recognize that exceedance of a ZOD is not equivalent to impairment, but rather, exceedance of 1.5 acres of continuous residues coverage is the impairment standard.

It should be noted that <u>DEC identified</u> the residues water quality standard was identified as a high priority for a forthcoming Triennial Review of the water quality standards. Any outcomes from that review that could result in actual changes to the criterion and possibly affect this residues policy and result in changes to the criteria for the waterbody categories.

History of the One-Acre Threshold

In 1985 Governor Sheffield convened the Alaska Timber Task Force to develop a common set of log transfer facility siting criteria. The Task Force created a Technical Subcommittee that was comprised of stakeholders including the U.S. Environmental Protection Agency, U.S. Forest Service, U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Army Corps of Engineers, Governor's Office, Alaska Department of Environmental Conservation, Alaska Department of Natural Resources – Division of Forestry, Alaska Department of Fish and Game – Habitat Division, United Fisherman of Alaska, representatives of the timber industry, a member of the public-at-large, and Sealaska Native Corporation. This group produced the document known as the 1985 Log Transfer Facility Siting, Construction, Operation and Monitoring-/-Reporting Guidelines more commonly known as the "LTF Guidelines."

It is within <u>T</u>this document <u>established a threshold of one-acre forthat</u> the interim intertidal and submarine bark accumulation, threshold of one acre was established.

Comment [JC195]: Much of this interpretation is repeative, often confusing and contains unnexcessary information.

Comment [JC196]: Explain the rationale on why exceedance of a ZOD—or >1 but <1.5- would not be considered an impairment or reference where this discussion is located in the document.

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The document states that "An interim guideline for threshold bark accumulation levels and cleanup when exceeding those levels is being used due to a lack of

Governor Sheffield tasked tThe Technical Subcommittee was tasked with developing LTF guidelines that "would be beneficial for all parties involved in the permitting, construction and operation of log transfer facilities to have a common set of criteria (guidelines) from which to work when designing (emphasis added) facilities and reviewing permit applications for these facilities." (Introduction, page 1, paragraph 3). The section titled The Use of Guidelines (page 2, paragraph 2) states that "The guidelines are comprehensive and may apply to any site being evaluated for LTF permits." It was never the intent of Tthe Technical Subcommittee for agencies never intended this threshold to retroactively apply this threshold to existing facilities since they were located and constructed prior to adoption of the guidelines and there was no anticipated permit workload associated with existing facilities. Some of these facilities had been in operation for 20 years prior to the development of siting guidelines without any permit limits on marine accumulation. Although additional research was not completed as planned, the use of the interim one-acre threshold level has continued to be used routinely in most log transfer and seafood discharge permits.

Bark monitoring is required annually for all permittees operating annually which transfer a total of 15 million board feet (mmbf) or more during the life of this permit, and which are located in water depths less than 60 feet at mean lower low water. The majority of LTFs operating under an individual or general NPDES permit are required to submit to DEC and EPA an annual dive survey report documenting the nature and extent of continuous and discontinuous bark residue accumulations at their sites. LTFs transferring under fifteen million board feet of timber volume are not required to conduct annual dive surveys, however a great majority of the LTFs are required to conduct annual dive surveys.

The two April 2004 EPA General Permits for LTFs are substantially different from previous individual permits in terms of the zones of deposits authorized under the permits. The General Permits adopted a "project area" zone of deposit, which recognizes and authorizes the deposition of bark residues in the project area. The project area is defined as the entire marine operating area of an LTF, either shore-based or offshore, including the following components: shore-based log transfer devices; shore-based log transfer, rafting, and storage areas; helicopter drop areas; vessel and barge loading and unloading areas; off-shore log storage areas not adjacent to a shore-based LTF; bulkheads, ramps, floating walkways, docks, pilings, dolphins, anchors, buoys and other marine appurtenances; and the marine water and ocean bottom underlying and connecting these features. The LTF operator identifies the size of the project area in the Notice of Intent or Notification. This project area usually coincides with the Department of Natural Resources tidelands lease area.

The State GPs also establish a one-acre "threshold" limit for continuous, or 100 percent, bark cover within the project area. If that threshold is exceeded, the operator is required to submit to DEC a "remediation plan," intended to reduce continuous bark cover to less than one acre. DEC must approve the remediation plan, which becomes part of the operator's State General Permit authorization. The purpose for establishing the project-area zone of deposit in the General Permits is to recognize that log rafting and log storage may occupy considerable area, and are expected to cause the accumulation of discontinuous bark (less than 100 percent cover) and trace

Comment [JC197]: What does the permit workload have to do with why this threshold was not intended to apply to existing facilities?

Comment [JC198]: Is this correct? Are yo u referring to the animal?

G. Residues Interpretation

bark (less than 10 percent cover). Discontinuous and trace bark are considered to have a minimal impact on marine organisms and habitat, and can occur without limit in the project area.

As a result of the 2002 final decision in the adjudication of DEC's 401 certification of the two EPA GPs, DEC cannot authorize facilities located on Section 303(d) impaired waterbodies to discharge under either of the general permits. A LTF on an impaired waterbody must obtain an individual State wastewater permit. As part of LTF permitting, DEC conducts an antidegradation review and finding, and makes all findings required under the ZOD regulations for each facility applying for residue discharge authorization.

Application of Zones of Deposits for Residues to Seafood Processing Facilities

As described above, the one-acre zone of deposit in permits had its initial application through the log transfer facility guidelines for new facilities in the 1980s. EPA consequently adopted the one-acre threshold as a compliance limit in NPDES permits for log transfer facilities and EPA's NPDES General Permit for seafood processors (AK-G52-0000) in the mid 1990s.

In 2001, DEC again certified a zone of deposit of 1.0 acre when this EPA General Permit for nearshore and shore-based seafood processing facilities was renewed. Currently this General Permit authorizes approximately 235 processors. Historically, this seafood General Permit specified that nearshore and shore-based facilities implement a seafloor monitoring program to ensure compliance with the water quality standards for settleable residues in marine waters.

It should be noted that For seafood facilities with individual NPDES permits, DEC has used a case-by-case determination of an acceptable zone of deposit size for residues since 1987.

Iindividual NPDES seafood permits have authorized residues deposits greater than the one-acre threshold found in the AK G52-0000 seafood general permit. For example, in the mid 1990s DEC issued a 401 certification for a two-acre ZOD for an outfall associated with a seafood processing facility, based upon the bathymetry of the bay. For seafood facilities with individual NPDES permits, a case-by-case determination of an acceptable zone of deposit size for residues has been the approach used since 1987.

The agencies have historically made a distinction between newly-permitted sites and existing permitted sites in arriving at an allowable ZOD size determination.

Reporting of Dive Survey Acreages

Previous reports of the actual acreage of bark coverage observed in dive surveys, and listed in Alaska's 1998 Section 303(d) report, could lead the public to believe that all reported continuous cover was a violation of permit conditions or of the Alaska's water quality standards. For example, an LTF with 3.1 acres of continuous bark coverage is actually 2.1 acres over the one-acre ZOD threshold for continuous bark coverage. Hence, the 1998 303(d) listing narrative might have stated that "dive survey information from November 1997 demonstrates a significant exceedance of the interim threshold bark accumulation level at 3.1 acres of bottom coverage."

In Alaska's Integrated Reports DEC will report dive survey acreages as "exceedances over the one acre ZOD threshold." For example, "the dive survey information from November 2001 demonstrates an exceedance of 2.1 acres above the permitted bark accumulation level of continuous bark coverage of 1.0 acre." This will more accurately portray actual exceedances over the permitted threshold. The level of timber harvest is significantly lower than in the past.

Comment [JC199]: Can you provide a scientific citation for this conclusion?

Comment [JC200]: What factors does DEC consider when making this determination?

Comment [JC201]: What is the distinction or difference? Please expand.

Comment [JC202]: Redundent and unneccessary

Reduced loading associated with reduced volume transferred is likely to act to reduce continuous cover accumulation over time. Limited research to determine the effect of transfer method and volume transferred on bark accumulation has established a weak statistical correlation between volumes transferred and barks accumulation. A similar correlation has not been established for the transfer method. As described above, the one-acre zone of deposit in permits had its initial application through the log transfer facility guidelines for new facilities in the 1980s. EPA consequently adopted the one-acre threshold as a compliance limit in NPDES permits for log transfer facilities and EPA's NPDES General Permit for seafood processors (AK-G52-0000) in the mid 1990s.

Criteria for Waterbody Categories

DEC is not proposing to re-categorize waterbodies previously determined to be impaired for residues associated with log transfer facilities simply because the General Permits incorporate a project area zone of deposit. The basis for placing waters impaired by bark residues on the 1998 Section 303(d) list in 1998-was the one-acre zone of deposit established in individual NPDES permits. For LTFs in Alaska authorized under the new General Permits, the threshold limit for continuous-cover bark in the General Permits remains one acre. The project area zone of deposit effectively applies to continuous, discontinuous and trace bark. The project area zone of deposit could be a basis for Section 303(d) listing only if significant deposits of bark and wood debris were documented outside of the project area.

For waterbodies associated with log transfer facilities or seafood processing, dive survey protocols and reporting should be in accordance with the requirements contained in the appropriate permits.

In making attainment determinations on waters associated with a log transfer facility and where DEC has received a Notification or Notice of Intent to Operate under a General Permit, DEC will make its categorization decision after evaluating the sufficiency and credibility of the dive survey data on file and required under the General Permits and the information provided in the Notice of Intent.

<u>Category 1 Waterbody</u> -- Category 1 waterbodies are waters attaining the water quality standard. Waterbodies are placed in this category if there is data to support a determination that the water quality standards and all of the uses are attained.

Waterbodies will be placed in this category when water quality data and information show that all uses are being attained.

<u>Category 2 Waterbody</u> -- Category 2 waterbodies are those waters that are attaining some designated uses, and insufficient or no data and information to determine if remaining uses are attained:

A waterbody will be placed in Category 2 where a determination is made that the waterbody is attaining some uses or standards. Waterbodies with recent dive survey reports and that demonstrate attainment with a 1.0 acre threshold for continuous coverage of residues will be placed in Category 2. For waterbodies associated with residues discharges, if a facility is reporting one or less acre of continuous residue coverage the waterbody will be placed in Category 2.

Comment [JC203]: Include citations to the research in a footnote.

Comment [JC204]: How does DEC define "sufficiency" and "credibility" with respect to dive survey data? Does this information include DEC conducting the following evaluation:

(1)alternatives that would eliminate, or reduce, any adverse effects of the deposit;

(2)the potential direct and indirect impacts on human health;

(3)the potential impacts on aquatic life and other wildlife, including the potential for bioaccumulation and persistence;

(4)the potential impacts on other uses of the waterbody;

(5)the expected duration of the deposit and any adverse effects; and

(6)the potential transport of pollutants by biological, physical, and chemical processes.

Comment [JC205]: Is it really necessary to repeat the general definitions of each category?

Comment [JC206]: What is the difference between these two statements?

G. Residues Interpretation

A waterbody that was determined to be impaired from residues and Category 5/Section 303(d) listed that has adequately documented continuous coverage of residues that is <u>less thanunder</u> 1.0 acre will be placed in Category 2.

Category 3 Waterbody -- Insufficient or no data and information to determine if any designated use is attained. Waterbodies are placed in this category where the data or information to support an attainment determination for any use is not available. Alaska has generally reliable information and data on facilities that discharge residues due to dive survey reporting requirements associated with residues discharge permits.

Developing supplementary data and information or scheduling monitoring should be done to assess the attainment status of these waters, as needed.

Criteria for placing waters in this category

Alaska's water resources include, for example, more than three million lakes greater than five acres in size, 365,000 miles of rivers and streams, over 174,000,000 acres or fresh water wetlands, and 36,000 miles of coastal shoreline. Hence, Alaska has a large number of waterbodies for which insufficient, inadequate, or little to no data or information exists to support attainment or impairment determinations. The Department expects that the majority of these waters would be in Category 1 (i.e., waters attaining standards for all uses), if sufficient resources existed to assess them. Category 3 includes waters formerly known as "open files" and waters nominated for assessment through ACWA. Actions that trigger opening a file can include nomination from the public, a public complaint, a newspaper report or more rigorous information, such as water quality reports or assessments. These waters will be placed in Category 3. DEC maintains files on some of these waterbodies and these are the waterbodies shown in Appendix E-C. in this report.

<u>Category 4b Waterbody</u> – Category 4b waterbodies are impaired waters but do not need TMDLs because there are other pollution controls in place and the waters are expected to attain water quality standards within a reasonable time period.

A waterbody will be placed in Category 4b if: LTF dive survey reports document there are greater than 1.5 acres of continuous residues coverage; a determination is made that the water is implaired; and there is an <u>DEC</u>-approved remediation plan under the LTF General Permits or an individual state wastewater discharge permit. Waterbodies that are under <u>EPA</u> compliance orders for seafood residue violations may also be considered for placement in Category 4b.

The requirements for preparing and submitting Remediation Plans, taken from DEC's Certificates of Reasonable Assurance for the two LTG General Permits are found in the document titled "Guidance For Preparing Remediation Plans Under Alaska's General Permits For Log Transfer Facilities". A brief summary of the requirements follows.

- If existing continuous bark and wood debris cover exceeds both one acre and a thickness
 of ten centimeters at any point, an operator must submit a Remediation Plan to DEC
 within 120 days, unless the Department grants additional time.
- A proposed Remediation Plan must evaluate historical and future log transfer processes
 and volumes; environmental impacts of existing deposits of bark and wood debris and the
 environmental impacts of methods to reduce continuous coverage; and methods to reduce
 continuous bark coverage, including alternative methods of log transfer and transport,

Comment [JC207]: Are you saying that few waters associated with potential residues impairments from LTFs or LSF will be in category 3 because dive surveys usually provide sufficient information to make a determination? If so, then make an explicit statement.

Comment [JC208]: Isn't this statement also true for Categories 4 and 5?

Comment [JC209]: Need to explain when such orders would suffice—give an example.

operational practices, technically feasible methods and costs of removing bark, and other methods.

- The Remediation Plan must identify a set of feasible, reasonable, and effective measures
 to reduce continuous bark cover to both less than one acre and ten centimeters at any
 point.
- If removal of bark is proposed, the Remediation Plan must specify areas, methods, volume, and timing of removal; and method of disposal of removed material, including practices to assure meeting water quality standards; and the cost of removal by the proposed methods and alternatives considered.
- The plan must include a performance schedule and performance measures for the implementation of the Plan.
- The plan may describe measures that can be implemented in phases, with continued bark
 monitoring surveys and with future modification of the Remediation Plan based upon
 progress in reducing the continuous coverage.
- DEC will approve, approve with modification, or deny a proposed Remediation Plan within 90 days of receipt.
- An approved Remediation Plan constitutes an enforceable condition of the General Permit.

There is no requirement in the LTF General Permits for EPA approval of the remediation plan. EPA requires that the LTF operator update the Pollution Prevention Plan to outline additional controls that will be implemented to reduce or eliminate additional residues accumulation. The revised Pollution Prevention Plan will not include measures intended to reduce the current bark accumulation to less than 1.0 acre.

The objective of remediation planning is to implement the most appropriate site-specific treatment with the goal of reducing the extent of continuous residues coverage to less than 1.0 acre.

<u>Category 5 Waterbody</u> — A waterbody will be listed in Category 5 and on the Section 303(d) list when a determination is made that the water is impaired by residues <u>and does not meet the requirements for Category 4b</u>. Category 5 waters require that a TMDL, or other equivalent pollution controls, is developed to attain water quality standards.

Section 303(d) of the Clean Water Act requires a list of waterbodies that are not expected to meet water quality standards without additional controls. Many Section 303(d) designated waters have not undergone comprehensive water quality assessments to determine either the extent of water quality impairment or whether existing controls are adequate to achieve the standards. DEC closely scrutinizes waterbodies to determine if suspected water quality violations were thoroughly investigated and documented. This approach is designed to prevent the listing of waterbodies with inconclusive or circumstantial data and/or observations alone.

For waterbodies with facilities that are permitted to discharge residues, such as a seafood processor or log transfer facility, the impairment standard is 1.5 acres of continuous cover. If

Comment [JC210]: There may be no requirement for EPA approval of the remediation plan but EPA must approve waters going into or staying in 4b.

Comment [JC211]: Equivalent pollution controls would be categorized as a 4b.

Comment [JC212]: Not necessary to repeat all this information in this section.

G. Residues Interpretation

two or more consecutive dive survey reports adequately documents the presence of 1.5 acres or more of continuous residue cover and without a DEC-approved remediation plan then the waterbody is Category 5/Section 303(d) listed.

A waterbody with a LTF with a current ZOD authorization will be placed in Category 5 if two or more consecutive dive survey reports documents there are more than 1.5 acres of continuous residues coverage and greater than 10 cm. at any one point unless DEC has approved a remediation plan for that waterbody. A waterbody will be placed in Category 5 when a submitter has failed to implement an approved remediation plan (LTF) according to its schedule. Exceptions may include waterbodies where ZODs were authorized at greater than 1.5 acres.

If DEC approves a remediation plan on a Category 5/Section 303(d) listed waterbody that is reporting over 1.5 acres of continuous coverage of bark on the bottom prior to the next Section 303(d) list, then the waterbody will be placed in Category 4(b) in the next Section 303(d) list.

A waterbody associated with a facility operating under either of the LTF General Permits that is reporting continuous coverage of residues over 1.5 acres and where the permittee failed to submit a remediation plan, or has submitted a remediation plan but is failing to implement the remediation plan, or is not meeting milestones set forth in the approved remediation plan, will be considered for Category 5/Section 303(d) listing.

A waterbody associated with an LTF where there is no currently permitted or active- discharge to the water, but where the last known dive survey reported more than 1.0 acres of continuous residues coverage on the marine seafloor, will be placed on the Category5/Section 303(d) list.

A waterbody associated with a seafood processor with a current ZOD authorization <u>and</u> with two or more dive survey reports that document more than a 1.5 acre area of seafood waste <u>will</u> be placed in <u>Category 5</u>. Exemptions would include waterbodies where ZODs were authorized at greater than 1.5 acres. Waterbodies with legacy sites seafood piles (<u>and</u> no current dischargers) that are determined to be over one acre of continuous residue coverage <u>willmay</u> be considered for Category 5/Section 303(d) listing.

For all Category 5/Section 303(d) waterbodies listed for residues after 1998 based on two dive surveys, the operator will have to document through two consecutive dive surveys that the areal extent of continuous cover residues has been reduced to less than 1.5 acres in order to be removed from the Category 5/Section 303(d) list. For all Category 5/Section 303(d) waterbodies listed for residues in 1998 or earlier, based on one acre and on one dive survey, the operator will have to document through one dive survey that the areal extent of continuous cover residues has been reduced to less than one acres in order to be removed from the Category 5/Section 303(d) list. If the areal extent of continuous cover is not declining in size, DEC will initiate permit modification or TMDL development.

The impairment threshold of basis for a greater than 1.5 acres of continuous coverage impairment standard for log transfer and seafood processing facilities with ZODs is based on several factors:

Comment [JC213]: I am having a hard time understanding the differences between these two paragraphs other than one involves a permit with a ZOD and the other a permit without a ZOD. Even so, it appears that the requirements are the same except the one without the ZOD does not include the "and greater than 10 cm. at any one point" Why?

Comment [JC214]: Which category would DEC place a water where the permittee's dive survey reported 1.3 acres and the permittee does not have DEC-approved remediation plan or for seafood residues of 1.3 acres associated with an active discharger?

Comment [JC215]: Iis there a requirements on woody residues piles being no greater than 10 cm. at any one point like with seafood residues? If not, why not?

Comment [JC216]: Isn't there a requirement on seafood residues piles being no greater than 10 cm. at any one point

Comment [JC217]: Be consistent. I personally prefer "Category 5" but I notice you use "Category 5" or Category 5/Section 303(d) list or Category 5/Section 303(d) listing.

Comment [JC218]: Over what period of time?

• Permits Establish Limits, not Water Quality Standards. The fixed one acre zone of deposit used for previous impairment determinations is a permit limit and not a water quality standard. Alaska's zone of deposit regulations (18 AAC 70.210 ZONES OF DEPOSIT) allows the deposition of substances on the bottom of marine waters within limits set by the department. However, the standards must be met at every point outside the zone of deposit. Permits use the water quality standards as a basis for setting effluent "limits" or for allowing flexibility from the water quality standards.

DEC specifies the criteria that can be exceeded in a permit, short-term variance or a certification. If a discharger is granted a zone of deposit within a permit, the permittee can only exceed the criteria that have been identified in their permit, certification or short-term variance.

• Confidence of Dive Survey Information. While EPA's NPDES individual permits contained protocols for dive surveys at LTFs, it appears that dive methods were not implemented consistently. As well, NPDES permits included no method for calculation of bark area, which often was overestimated. These inconsistencies compared to current protocols in the General Permits raise the issue of the reliability of dive survey information that resulted in previous listing decisions, and make it difficult to track trends in actual bark accumulation patterns. For instance, a 1997 dive survey on bark residues that resulted in the 1998 impairment determination and Section 303(d) listing reported the presence of measurable bark or trace coverage. The reported 9.5-acre bark footprint was based upon plots with measurable bark rather than continuous-cover bark.

The dive survey requirements contained in Seafood GPs are based upon seafood waste residue dispersal patterns and seafloor monitoring. The lack of a perimeter dive survey requirement leads to uncertainty in the impairment determination similar to LTFs.

- Uncertainty in Current Approved Method and Acreage Calculations of Dive Survey Reports. DEC has often noted that the current required method of acreage calculation is not used correctly. As part of the dive survey review DEC re-calculates continuous cover based upon dive survey reports. For facilities on the 1998-Section 303(d) listed in 1998 DEC calculations indicate that five of the seven 2002 dive survey reports for these facilities overstated the extent of continuous cover. Of all the reports reviewed to date since the inception of the two LTF General Permits only one report understated the extent of continuous cover. Because of this uncertainty, and by using an impairment standard of 1.5 acres of continuous coverage, DEC is confident that impairment decisions truly reflect actual impairment.
- Natural Reduction of Residues Deposits. Dive survey reports for LTFs that transferred little or no timber volume over a number of years often showed considerable reduction in the areal extent of continuous coverage. The reduction was likely due to natural sedimentation and/or current dispersement. For example, the areal extent of continuous bark coverage on the bottom of Corner Bay declined from 1.2 acres in 1996 to 0.6 acre in 2001. No logs were transferred during this period, and no active remediation occurred.

The level of timber harvest is significantly lower than in the past. Reduced loading associated with reduced volume transferred is likely to act to reduce continuous cover accumulation over time. Limited research to determine the effect of transfer method and

Comment [JC219]: On what basis do you make this conclusion?

Comment [JC220]: On what basis do you conclude that the bark area calculations were overestimated?

Comment [JC221]: By how much did they overstate the extent of continuous cover? Was the average 0.5 acres? Is this true for both seafood and woody debris? Wouldn't it be better to educate the dive surveyors on proper interpretation of results then to change an impairement threshold based on faulty implementation of the protocol described in the permit?

Comment [JC222]: How does this "factor" relate to why using 1.5 acre threshold for determining impairment?

volume transferred on bark accumulation has established a weak statistical correlation between volumes transferred and bark accumulation. A similar correlation has not been established for the transfer method.

- A 1.0 Acre Accumulation Threshold and a 1.5 acre Impairment Standard. There is clear and pervasive language within the LTF Guidelines that establishes the one acre zone of deposit standard as a threshold standard for clean-up, and not an impairment standard per se.
- Impacts to the Biological Community. There is a recognition, history and general acceptance of zone of deposits for dischargers of residues to the marine environment in Alaska. The hearing officer findings, for instance, from the LTF adjudication of the DEC proposed 401 certifications of the two federal General Permits found that the discharge of bark and wood debris sited and operated in conformity with the permit will have limited and localized impacts on the benthic community within the project area. The hearing officer also asserted that such discharges would have no discernable effect on the benthic environment as a whole in the geographic area covered by the General Permits. Patchy and discontinuous bark residue deposition on the bottom is authorized under the LTF General Permits. Additionally, there is an antidegradation finding made for each LTF facility permit.

It is recognized that excessive residue coverage over 1.5 acres, that is continuous and in excessive depth accumulations, can have adverse impacts. Facilities that are operating under permit conditions with ZODs are accepted as not adversely affecting the biological community or causing irreparable harm.

In the LTF General Permits, exceeding the one-acre continuous-cover threshold triggers the requirement to develop a remediation plan.

Removal of Waterbodies from the Category 5/Section 303(d) List Determined to be Impaired from Residues

The following protocols will be applied to all waterbodies associated with a permitted facility and Category 5/Section 303(d) listed for residues regardless of <a href="https://www.whether.nc.gov/wheth

■ For waterbodies on the 2002 Section 303(d) list or a later listed after 1998 and determined to be impaired for residues based upon two or more dive surveys:

DEC will require two consecutive dive surveys documenting that continuous residues coverage is no more than 1.5 acres before the waterbody is eligible for removal from Category 5/Section 303(d) list and for placement in either Category 1 or 2.

■ For waterbodies on the 1998 Section 303(d) list or an earlier listed in 1998 or earlier (based on 1.0 acre) and determined to be impaired for residues based upon one dive survey or best professional judgment:

Comment [JC223]: This was mentioned before and I am not sure how this research relates to natural reduction of residues deposits. Please elaborate on the relationship or delete.

Comment [JC224]: I still fail to understand even more why the threshold for impairment should differ from the clean up threshold and permit limits. Seems like a stronger argument for a 1 acre threshold

Comment [JC225]: A hearing officer is not a scientific expert. Is the impairment determined by project area or over the entire waterbody?

Comment [JC226]: May want to include in a footnote moe about what is involved in making an antidegration finding or reference the section in this report that discusses this.

Comment [JC227]: How does DEC define excessive depth accumulations? More than 10 cm?

Comment [JC228]: By whom?

Comment [JC229]: Would the threshold be 1.0 or 1.5 or it doesn't matter?

G. Residues Interpretation

DEC will require one dive survey documenting that continuous residues coverage is no more than 1.0 acre before the waterbody is eligible for removal from Category 5/Section 303(d) list and <u>for placement</u> in Category 1 or 2.

■ In addition to consideration of the continuous residues coverage standard of 1.5 acres DEC may consider biological assessment information, such as sediment profile imaging, in a determination to remove a water on the Section 303(d) list for residues.

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Comment [JC230]: Would DEC consider this kind of information to add a water to the list for residues impairment?

APPENDIX H

Alaska Clean Water Actions (ACWA) Priority Ranking

The following table identifies the rankings assigned to Alaska waterbodies by the Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, and Alaska Department of Natural Resources, which are abbreviated as F&G, DEC, and DNR, respectively in the table below. The final column, labeled "MAX," identifies the agency that made the highest ranking and that ranking. Each agency ranked factors for a different component: F&G rated aquatic habitat, DNR rated water quality, and DEC rated water quality. Additional column abbreviations are Lwr for lower and Med for medium. This table was generated in October 2009.

Waterbody Name F&G DEC **DNR** MAX Akutan Harbor Lwr Med Lwr DEC Med Anchor Pt to Happy Valley Creek Lwr Lwr Lwr F&G Lwr Anchor River High F&G High High Lwr Anvil Creek High High High F&G High Auke Bay DEC High Med High I wr Auke Creek **DEC High** Med High Med Auke Lake Med High Lwr **DEC High** Auke Nu Cove High F&G High High I wr Auke Nu Creek Med Med Lwr F&G Med Barabara Creek Lwr Lwr Lwr F&G Lwr **Bear Cove DEC Med** Lwr Med Lwr Bear Creek (Becharof) F&G Med Med Med Lwr Bear Creek (Hogatza) High Lwr Lwr F&G High Bear Creek (Homer) I wr Med Med **DEC Med** Bear Creek (Hope) Med Med F&G Med Med Beaver Creek (Kenai) Med Med Lwr F&G Med **DEC Med** Beaver Inlet Med I wr I wr Beaver Lake Med Lwr Lwr F&G Med **Bell Flats** Med Med Lwr F&G Med Beluga Lake (Homer) **DNR Med** Med Lwr Lwr Benny Creek Lwr Lwr Lwr F&G Lwr Berners Bay F&G High High Med I wr Bidarka Creek F&G Lwr Lwr Lwr Lwr Big Lake High F&G High High Lwr Birch Creek (Talkeetna) Med Lwr Med F&G Med Birch Creek, Upper Drainage **DEC High** Med High I wr Birch Lake Med Med F&G Med Lwr Black Bear Creek F&G High High Med Med F&G High **Bodenburg Creek** High Med Lwr Bolio Lake F&G Lwr Lwr Lwr Lwr Bons Creek Med Lwr Med F&G Med Bradfield River High F&G High Lwr Lwr

Comment [j231]: Doesn't DNR rate the water quantity rather than water quality?

I.Supplement Listing Methodology

Waterbody Name	F&G	DEC	DNR	MAX
Bridge Creek	Med	Med	High	DEC Med
Cabin Creek	Lwr	Lwr	Lwr	F&G Lwr
Cache Creek	Med	Med	Med	F&G Med
California Creek	Med	Med	Med	F&G Med
Campbell Creek	High	High	Lwr	F&G High
Campbell Lake	Med	High	Lwr	DEC High
Captains Bay	Lwr	High	Lwr	DEC High
Caribou Creek	Lwr	Lwr	Lwr	F&G Lwr
Carlanna Creek	High	High	Lwr	F&G High
Cedar Bay	Lwr	Lwr	Lwr	F&G Lwr
Chatanika River	Med	Lwr	Lwr	F&G Med
Chena River	High	High	Lwr	F&G High
Chena Slough	Med	High	Lwr	DEC High
Cheney Lake	High	High	Lwr	F&G High
Chester Creek	High	High	Lwr	F&G High
Chilkat River	Lwr	Med	Lwr	DEC Med
China Poot Bay	Lwr	Med	Lwr	DEC Med
China Poot Creek	Lwr	Med	Lwr	DEC Med
Chuitna River	High	High	Lwr	F&G High
Clear Creek	Lwr	Med	Med	DEC Med
Clearwater Creek	High	High	Lwr	F&G High
Clearwater Lake	Lwr	Lwr	Lwr	F&G Lwr
Cold Bay	Lwr	High	Lwr	DEC High
Colleen Lake	Lwr	Lwr	Lwr	F&G Lwr
Colville River/Umiat Lake	Lwr	Lwr	Lwr	F&G Lwr
Connors Lake	Med	Med	Lwr	F&G Med
Cooper Creek	High	Lwr	Lwr	F&G High
Copper River	High	High	Lwr	F&G High
Corner Bay	Lwr	Med	Lwr	DEC Med
Cottonwood Creek	High	High	Lwr	F&G High
Cottonwood Lake	High	Med	Lwr	F&G High
Crab Bay	Lwr	Med	Lwr	DEC Med
Crooked Creek	Med	High	Lwr	DEC High
Crow Creek	Med	Med	Med	F&G Med
Cube Cove	Lwr	Med	Lwr	DEC Med
Dark Lake	Med	Lwr	Lwr	F&G Med
Deep Creek	High	High	Lwr	F&G High
Deshka River (Kroto Creek)	High	High	Lwr	F&G High
Diamond Creek	Lwr	Lwr	Lwr	F&G Lwr
Dog Salmon Creek	Med	Med	Lwr	F&G Med
Dogfish Bay (Koyuktolik Bay)	Lwr	Lwr	Lwr	F&G Lwr
Dora Bay	Lwr	Med	Lwr	DEC Med
Dora Lake	Med	Med	Lwr	F&G Med
Duck Creek	Med	High	High	DEC High
Dutch Harbor	Lwr	High	Lwr	DEC High
Eagle River	Med	High	Lwr	DEC High
Eagle River Flats	Lwr	Med	Lwr	DEC Med
East Creek	Lwr	Lwr	Med	DNR Med

I.Supplement Listing Methodology

Waterbody <mark>Name</mark>	F&G	DEC	DNR	MAX
East Port Frederick	Lwr	High	Lwr	DEC High
Egegik River	Med	High	Lwr	DEC High
Eklutna River	Med	Med	High	DEC Med
Eldred Passage	Lwr	Lwr	Lwr	F&G Lwr
Elfin Cove	Med	Med	Lwr	F&G Med
English Bay River	Lwr	Lwr	Lwr	F&G Lwr
Eskimo Creek	Lwr	Lwr	Lwr	F&G Lwr
Eyak Lake	Med	High	Lwr	DEC High
Falls Creek	Lwr	Lwr	Lwr	F&G Lwr
Falls Creek (Gustavus)	Lwr	Med	Lwr	DEC Med
Falls Creek (Kachemak)	Med	Lwr	Med	F&G Med
Finger Lake	Lwr	Med	Lwr	DEC Med
Fire Cove	Lwr	Med	Lwr	DEC Med
Fire Lake	Lwr	Lwr	Lwr	F&G Lwr
Fish Creek (Anchorage)	Med	High	Lwr	DEC High
Fish Creek (Wasilla)	Med	Med	High	DEC Med
Fortymile	Med	Med	Med	F&G Med
Fox River	High	Med	Lwr	F&G High
Freshwater Creek	Med	Lwr	Lwr	F&G Med
Fritz Creek	High	Med	High	F&G High
Fubar Creek	Lwr	Med	Lwr	DEC Med
Funny River	High	Med	Lwr	F&G High
Furrow Creek	Lwr	High	Lwr	DEC High
Garrison Slough	Lwr	Lwr	Lwr	F&G Lwr
Gastineau Channel	High	Med	Lwr	F&G High
Gibson Cove	Lwr	Med	Lwr	DEC Med
Glacier Creek	High	High	Lwr	F&G High
Goldstream Creek	High	High	Lwr	F&G High
Goodnews River	Med	Med	Lwr	F&G Med
Goose Bay	Med	Lwr	Lwr	F&G Med
Goose Creek	Lwr	Lwr	Med	DNR Med
Goose Lake	Lwr	Med	Lwr	DEC Med
Granite Creek	High	High	Lwr	F&G High
Greens Creek	Lwr	Lwr	Lwr	F&G Lwr
Gulkana River (Lower River)	Lwr	High	Lwr	DEC High
Gulkana River (upper)	Med	High	Lwr	DEC High
Gunnuk Creek	Med	High	Lwr	DEC High
Halibut Cove	Med	High	Lwr	DEC High
Hamilton Bay	Lwr	Med	Lwr	DEC Med
Hammer Slough	Med	Med	Lwr	F&G Med
Harding Lake	Med	Lwr	Lwr	F&G Med
Harris River	Lwr	Lwr	Lwr	F&G Lwr
Hatchery Creek	Med	High	Lwr	DEC High
Hawk Inlet	Med	Lwr	Lwr	F&G Med
Herring Bay Creek	High	High	Med	F&G High
Hideaway Lake	Lwr	Lwr	Med	DNR Med
Hoadley Creek	High	High	Lwr	F&G High
Hobart Bay	Lwr	Med	Lwr	DEC Med

I.Supplement Listing Methodology

Waterbody Name	F&G	DEC	DNR	MAX
Hogatza River	Med	Med	Lwr	F&G Med
Homer Harbor	Med	High	Lwr	DEC High
Hood/Spenard Lake	Lwr	High	Lwr	DEC High
Horseshoe/Island Lakes	Med	Med	Lwr	F&G Med
Hospital Lake	Lwr	Lwr	Lwr	F&G Lwr
Iliamna Lake	Med	High	Lwr	DEC High
Iliuliuk Bay	Lwr	High	Lwr	DEC High
Iliuliuk Harbor	Lwr	High	Lwr	DEC High
Indian River	High	High	High	F&G High
Jakolof Bay	Lwr	Med	Lwr	DEC Med
Jewel Lake	Med	High	Lwr	DEC High
Jim Creek	High	High	Lwr	F&G High
Jim Lake	High	Med	Lwr	F&G High
Johnson Creek	Med	Med	Med	F&G Med
Jones Lake	Lwr	Lwr	Lwr	F&G Lwr
Jordan Creek	High	High	Lwr	F&G High
Juneau Creek	Lwr	Med	Lwr	DEC Med
Kachemak Bay	Lwr	Med	Lwr	DEC Med
Kalmbach Lake	Lwr	Lwr	Med	DNR Med
	Med	Med	Lwr	F&G Med
	Lwr	Lwr	Lwr	F&G Lwr
	High	High	Lwr	F&G High
	Lwr	Med	Lwr	DEC Med
	High	High	Lwr	F&G High
	Lwr	Med	Lwr	DEC Med
	High	High	Lwr	F&G High
	Med	High	Lwr	DEC High
	Lwr	High	Lwr	DEC High
	Med	Lwr	Lwr	F&G Med
	Lwr	Med	Lwr	DEC Med
	Lwr	Med	Lwr	DEC Med
	Lwr	Med	Lwr	DEC Med
	Lwr	High	High	DEC High
	Lwr	Lwr	Lwr	F&G Lwr
	High	Med	Lwr	F&G High
	Lwr	Lwr	Lwr	F&G Lwr
	High	Lwr	Lwr	F&G High
	Lwr	Med	Lwr	DEC Med
	Med	Lwr	Lwr	F&G Med
	Lwr	High	Lwr	DEC High
	High	Lwr	Lwr	F&G High
	Med	High	Lwr	DEC High
	Lwr	High	Lwr	DEC High
	Lwr	Lwr	Lwr	F&G Lwr
	Med	Med	Lwr	F&G Med
	High	High	Lwr	F&G High
	Med	Lwr	Lwr	F&G Med
	Lwr	High	Lwr	DEC High

I.Supplement Listing Methodology

Waterbody Name	F&G	DEC	DNR	MAX
Little Campbell Lake	Med	Lwr	Lwr	F&G Med
Little Creek (South Fork, Nome)	Lwr	Med	Lwr	DEC Med
Little Rabbit Creek	High	High	Lwr	F&G High
Little Survival Creek	Med	High	Lwr	DEC High
Little Susitna River	High	High	Lwr	F&G High
Little Tutka Bay	Lwr	Lwr	Lwr	F&G Lwr
Lookout Cove	Lwr	Med	Lwr	DEC Med
Lost and Found Lake	Lwr	Lwr	Lwr	F&G Lwr
Lower Fire Lake	Lwr	Lwr	Med	DNR Med
Lower Talarik	Med	Med	Lwr	F&G Med
Lutak Inlet	Lwr	Med	Lwr	DEC Med
Mallard Bay	Lwr	Med	Lwr	DEC Med
Margaret Bay	Lwr	Med	Lwr	DEC Med
Margaret Creek	Med	Med	Lwr	F&G Med
Mariner Creek	Lwr	Lwr	Lwr	F&G Lwr
Matanuska River	Med	High	Lwr	DEC High
McClure Bay	Med	Lwr	Lwr	F&G Med
McKinley Lake	Lwr	Lwr	Lwr	F&G Lwr
McKinzie Inlet	Lwr	Med	Lwr	DEC Med
McNeil Creek	Med	Lwr	Med	F&G Med
McRoberts Creek	Med	Med	Lwr	F&G Med
Meadow Creek	Med	High	High	DEC High
Meadow Lake	Lwr	Lwr	Med	DNR Med
Memory Lake	Med	Med	Med	F&G Med
Mendenhall River	Med	High	Lwr	DEC High
Mills Creek	Lwr	Med	Lwr	DEC Med
Minook Creek	Lwr	Med	Lwr	DEC Med
Mirror Lake	Lwr	Lwr	Med	DNR Med
Mission Lake	Med	Lwr	Lwr	F&G Med
Montana Creek (Juneau)	Med	High	Lwr	DEC High
Montana Creek (Talkeetna)	High	High	Lwr	F&G High
Moose Creek	Med	Lwr	Med	F&G Med
Moose River	Med	Lwr	Med	F&G Med
Mosquito Lake	High	High	Med	F&G High
Mud Bay (Homer)	Lwr	Med	Lwr	DEC Med
Mulchatna River	Lwr	Med	Lwr	DEC Med
Nahodka Creek	Lwr	Lwr	High	DNR High
Naknek River	Lwr	Lwr	Lwr	F&G Lwr
Nakwasina River	High	High	Lwr	F&G High
Nancy Lake	High	High	Med	F&G High
Nataga Creek	Med	Med	Lwr	F&G Med
Nearshore Beaufort Lagoon	Lwr	Lwr	Lwr	F&G Lwr
Neptune Bay	Lwr	Lwr	Lwr	F&G Lwr
Nilumat Creek	Lwr	Med	Lwr	DEC Med
Ninilchik River	Med	High	Lwr	DEC High
Nome River	High	Med	Lwr	F&G High
North Twin Lakes	Lwr	Med	Lwr	DEC Med
Noyes Slough	High	High	High	F&G High

I.Supplement Listing Methodology

Waterbody Name	F&G	DEC	DNR	MAX
Nushagak River	Med	High	Lwr	DEC High
One Mile Creek	High	High	Med	F&G High
Ophir Creek	Med	Med	Med	F&G Med
Orca Inlet	Med	Med	Med	F&G Med
Palmer Creek (Homer)	Lwr	Lwr	Med	DNR Med
Passage Canal (Whittier Harbor)	Lwr	Lwr	Lwr	F&G Lwr
Pavlof River	Lwr	Lwr	Lwr	F&G Lwr
Paxson Lake	Lwr	Lwr	Lwr	F&G Lwr
Pederson Hill Creek	Lwr	High	Lwr	DEC High
Peters Creek	Med	Lwr	Lwr	F&G Med
Peterson Bay	Med	High	Lwr	DEC High
Peterson Creek	High	High	Med	F&G High
Pile-Driver Slough	Lwr	Lwr	Lwr	F&G Lwr
Point Macartney	Lwr	Med	Lwr	DEC Med
Popof Strait	Lwr	High	Lwr	DEC High
Port Clarence	Lwr	Lwr	Lwr	F&G Lwr
Port Valdez	Lwr	Med	Med	DEC Med
Port Valdez Small Boat Harbor	Lwr	Lwr	Lwr	F&G Lwr
Potato Patch Lake	Med	Med	Lwr	F&G Med
Potter Creek	Med	Lwr	Med	F&G Med
Pullen Creek	High	High	Lwr	F&G High
Quartz Creek	High	High	Lwr	F&G High
Quartz Lake	Lwr	Lwr	Lwr	F&G Lwr
Rabbit Creek	Med	High	High	DEC High
Red Devil Creek	Lwr	Med	Lwr	DEC Med
Red Dog Creek	Lwr	Lwr	Lwr	F&G Lwr
Red Fox Creek	Lwr	High	Lwr	DEC High
Red Lake-Anton Road Ponds	Lwr	High	Lwr	DEC High
Resurrection Creek (Hope)	High	High	Lwr	F&G High
Rice Creek	Lwr	Lwr	Med	DNR Med
Rogge Creek	Lwr	Lwr	Lwr	F&G Lwr
Rowan Bay	Lwr	Med	Lwr	DEC Med
Ruby Creek	Lwr	Med	Lwr	DEC Med
Sagavanirktok River	Med	Lwr	Lwr	F&G Med
Saginaw Bay	Lwr	Med	Lwr	DEC Med
Saint John Baptist Bay	Lwr	Med	Lwr	DEC Med
Saint Paul Island Lagoon	Lwr	High	Lwr	DEC High
Salmon Creek	Med	High	High	DEC High
Salt Lake Bay	Lwr	Med	Lwr	DEC Med
Sawmill Creek (Haines)	High	High	Lwr	F&G High
Sawmill Creek (Sitka)	Lwr	Lwr	Lwr	F&G Lwr
Scheffler Creek	Lwr	Lwr	Lwr	F&G Lwr
Schulze Cove	Lwr	Med	Lwr	DEC Med
Seldovia Bay	High	High	Lwr	F&G High
Seldovia Bay (Harbor)	Lwr	Lwr	Lwr	F&G Lwr
Shaw Creek	High	High	Lwr	F&G High
Ship Creek-Glenn Highway Bridge Down to Mouth	High	High	Lwr	F&G High

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F&G	DEC	DNR	MAX
Lwr	Lwr	Lwr	F&G Lwr
Med	Med	Lwr	F&G Med
Med	Med	Lwr	F&G Med
Med	Lwr	Lwr	F&G Med
Lwr	High	Lwr	DEC High
Med	Lwr	Lwr	F&G Med
Med	High	Lwr	DEC High
Lwr	High	Lwr	DEC High
Lwr	High	Lwr	DEC High
High	Med	Lwr	F&G High
Lwr	Med	Lwr	DEC Med
Med	Lwr	Lwr	F&G Med
High	Med	Lwr	F&G High
Med	Lwr	Lwr	F&G Med
Lwr	Lwr	Lwr	F&G Lwr
Med	Lwr	Lwr	F&G Med
High	Lwr	Lwr	F&G High
High	Med	Lwr	F&G High
Lwr	Lwr	Lwr	F&G Lwr
Med	High	Lwr	DEC High
Lwr	Lwr	Lwr	F&G Lwr
High	High	Lwr	F&G High
Med	Lwr	Med	F&G Med
Lwr	Med	Lwr	DEC Med
Lwr	Lwr	Lwr	F&G Lwr
Lwr	Lwr	Lwr	F&G Lwr
Med	High	Lwr	DEC High
Med	Med	Lwr	F&G Med
High	Med	Lwr	F&G High
Med	Lwr	Lwr	F&G Med
Med	High	Lwr	DEC High
Lwr	Lwr	Lwr	F&G Lwr
Lwr	High	Lwr	DEC High
Med	Lwr	Lwr	F&G Med
Med	Lwr	Lwr	F&G Med
Lwr	Med	Lwr	DEC Med
Lwr	High	Lwr	DEC High
Lwr	Lwr	Med	DNR Med
Lwr	Lwr	Lwr	F&G Lwr
Med	Med	Lwr	F&G Med
Lwr	Med	Lwr	DEC Med
Lwr	Med	Lwr	DEC Med
Lwr	Med	Lwr	DEC Med
		Lwr	DEC Med
			F&G Lwr
Med	Lwr	High	DNR High
Lwr	High	Lwr	DEC High
	Lwr Med Med Med Lwr Med Lwr High Lwr Med High Med Lwr Med High High Lwr Med Lwr Med Lwr Med Lwr Med Lwr Lwr Med Lwr Lwr Lwr Lwr Lwr Med Lwr Lwr Med Lwr	Lwr Lwr Med Med Med Med Med Med Med Lwr Lwr High Med Lwr High Lwr High Lwr High High Med Lwr Med Lwr High Med Lwr Lwr Lwr Med Lwr High Med Lwr High Med Lwr High Med Lwr Lwr High Med Lwr High Med Lwr Lwr High Med Lwr Lwr High High Med Lwr Lwr Lwr High High Med Lwr	Lwr Lwr Lwr Med Med Lwr Med Med Lwr Med Lwr Lwr Med Lwr Lwr Lwr High Lwr Med Lwr Lwr Med High Lwr Lwr High Lwr Lwr High Lwr Lwr High Lwr Lwr High Lwr High Med Lwr Lwr Med Lwr Med Lwr Lwr High Med Lwr Lwr Wr Med Lwr Lwr High Med Lwr Lwr Lwr Med Lwr Lwr Med Lwr Lwr Med High Lwr Lwr Lwr Med Lwr Med High Lwr Med Lwr Med High Lwr Med Lwr Lwr Lwr Med High Lwr Lwr Lwr Lwr Med Lwr

I.Supplement Listing Methodology

Waterbody Name	F&G	DEC	DNR	MAX
Unnamed Lake (Chena Hot Springs Rd.) Two Rivers Lodge	Lwr	Lwr	Lwr	F&G Lwr
Upper Bonnie Lake	Lwr	Lwr	Lwr	F&G Lwr
Upper Fire Lake	Lwr	Lwr	Med	DNR Med
Upper Talarik Creek	High	Med	Lwr	F&G High
Vanderbilt Creek	Med	High	Lwr	DEC High
Walby Lake	Med	Lwr	Med	F&G Med
Ward Cove	Lwr	High	Lwr	DEC High
Wasilla Creek	High	High	Lwr	F&G High
Wasilla Lake	High	High	Lwr	F&G High
West Port Frederick	Lwr	Med	Lwr	DEC Med
Westchester Lagoon	Med	High	Lwr	DEC High
Whale Passage	Lwr	Med	Lwr	DEC Med
Whittier Creek	Med	Lwr	Med	F&G Med
Willow Creek	High	High	Lwr	F&G High
Winter Harbor	Lwr	Med	Lwr	DEC Med
Womens Bay	Lwr	Med	Lwr	DEC Med
Wood River	Med	High	Lwr	DEC High
Woodard Creek	Med	Med	Med	F&G Med
Wrangell Narrows	Lwr	Med	Lwr	DEC Med
Wrinkleneck Creek-Swan Lake	Lwr	Med	Lwr	DEC Med
Wulik River	Med	High	Med	DEC High
Yukon River	Lwr	Med	Lwr	DEC Med
Zinc Creek	Lwr	Lwr	Lwr	F&G Lwr

APPENDIX I Supplemental Listing Methodology

Guidance for Determining Water Quality Impairments from Turbidity

This listing and assessment methodology for the turbidity pollutant is not a change to the turbidity criterion within Alaska water quality standards; however, it does provide direction for implementing the criterion when making water quality attainment or impairment determinations.

Parameter-Specific Criteria

The methodology used by Alaska to evaluate waterbodies for the turbidity criterion specified in 18 AAC 70.020(b)(12) and (24) is described below.

Identification of Natural Conditions

When considering data in an impairment decision, the natural background condition, or reference condition, must be established. This first step is essential because the term "above natural conditions" is key to the criteria specified for five of the seven water uses protected from turbidity. Turbidity data collected without an established natural condition should not be considered in any impairment determination. Many of Alaska's waters have naturally occurring turbid flows, especially glacially fed or tidally influenced waters, and care must be taken to effectively establish a natural condition for reference.

Alaska recognizes that variability in turbidity—among sites and over time—complicates the task of determining a natural or background level for any specified level of discharge.

To collect water samples, a concurrent or an "upstream, downstream" approach is preferred. This approach entails sampling to establish natural conditions. Measurements taken upstream (control/natural conditions) and downstream (treated/impacted) of a particular pollutant source are compared. It is assumed that any increase in turbidity is due to the source or activity. Because upstream sampling establishes the natural conditions,

Comment [JC233]: Wouldn't you only be able to use this approach is the upstream water is similar to the downstream water with respect to hydrology, morphology, aspect, etc.?

readings should be taken upstream of any suspected exceedances of the criteria and of any man-induced point or nonpoint sources of turbidity.

When it may not be feasible to establish an upstream reference condition, a "paired watershed" approach may be used. In this approach, a nearby water with similar hydrology, morphology, aspect, and other characteristics is identified for use in establishing the natural condition. The upstream, downstream approach is the preferred method, and data using this method may be weighted greater than data gathered through a paired watershed approach.

Samples taken to establish reference conditions must collected at approximately the same time of year and during the same flows, as when samples are collected for suspected exceedances.

Because turbidity can be influenced by natural phenomena, such as storm events, sampling during or immediately after high flow or storm events should be avoided. Low-flow, dry-period sampling also should be avoided. Any turbidity data taken during such events should be discounted. Such data would not be considered less reliable if exceedances and impairment are suspected to be persistently occurring at low-flow or high flow storm events and to be a result of man-induced activities. For these instances, the preferred approach is to gather data at a wide range of flow events.

Visual Turbidity Observations

Although DEC may note visual observations of elevated turbidity observations as a signal for potential may often be noted and signal criteria exceedances, Alaska does not make impairment determinations, and the associated Section 303(d) listings, based solely on visual turbidity observations. Visual observations often lead to further investigation identification of suspected criteria exceedances through monitoring. To confirm exceedances, DEC compares the results of in-water nephelometric turbidity unit (NTU) sampling are compared to an established reference condition.

Minimum Data Requirements and Analysis

<u>DEC used cCurrent data</u> (less that 5 years old) are generally used for evaluating on of turbidity, although some documentation or data more than 5 years old may be relevant. <u>DEC gives less significance to o</u>Older data are generally given less significance when reviewing information in an impairment determination.

Collection of 20 or more samples during at least three sampling events, with each sampling event separated by at least 1 week, is required to establish persistent exceedances of the turbidity criterion. Larger sample sets are desirable.

Sample locations should be reasonably distributed to avoid bias in any one sampling event. Sampling is generally obtained for at least two seasons. For example, 20 samples could be

Comment [JC234]: This sentence is very confusing. Please revise to improve clarity.

Comment [JC235]: What happens if a natural or reference condition does not exist or has not been established?

collected during the first and third weeks of May and the first week of June to make a determination.

DEC will consider placing a waterbody in Category 5 iHf more than 10% of the samples exceed the turbidity criteria, the waterbody is considered for assignment to Category 5.

DEC scruntinizes oOutliers, or results that are numerically distant from other data, are fully scrutinized, and in certain instances, such as in a clear storm event situation, DEC they may be discount this dataed. DEC views oOutliers will be viewed in "totality" of the entire data set. DEC will not base Aan impairment determination will not be based on outliers alone.

The preferred method for establishing turbidity impairment is to employ the use of continuous sampling data loggers which are capable of recording large data sets. In these instances, statistical analysis may be required.

Before <u>DEC decides</u> a final decision to add a waterbody impaired by turbidity to <u>Category 5the Section 303(d) list</u>, <u>DECAlaska</u> reviews the data for the basic concepts employed in any listing, including persistence, duration, and magnitude. <u>DEC will evaluate such t</u> Tools such as enforcement and permit limitations should be evaluated for the ability to effectively reduce the exceedances.

Removal of a Water from the Section 303(d) List for Turbidity

DEC will The current listing methodology used by Alaska dictates that for removeal of a water from Category 5the Section 303(d) list, based on the same both the level of data and to support the removal determination and the burden of proof are no greater than thatose used in making the initial determination to the initial place the waterbody in Category 5Section 303(d) listing determination. DEC placed waters For a water that was placed on the 2008 Section 303(d) list (in 2008 or earlier) for turbidity impairment based on visual turbidity observations and best professional judgment. Therefore -DEC can a determination to remove these waters from Category 5 [the Section 303(d) list] may be based on visual turbidity observations and best professional judgment alone.

Guidance for Determining Water Quality Impairments from Pathogens

Test methods for <u>making determinations on</u> pathogen <u>impairements can be founds are specified</u> in 18 AAC 70. The fecal coliform bacteria and enterococci enumeration must be determined by the membrane filter technique or most probable number procedure, <u>in</u> accord<u>ance withing to</u> the approved editions of *Standard Methods for the Examination of Water and Wastewater*, adopted by reference in 18 AAC 70.020(c), or in accordance with other <u>test methodsstandards</u> approved by DEC and EPA.

Section 303(d) listing determinations must be based on a laboratory analysis with an adequate quality assurance project plan (QAPP) for any fecal coliform or enterococci

Comment [JC236]: Is this evaluation conducted to determine whether to place the water in category 4b instead?

Comment [JC237]: For all uses in all kinds of waters, you note the number of samples required over what period of time and they vary from 5 to 30. How did you select the minimum number of samples required? For the residues guidance, you include history and rationale for selection of methods and yet this information is not provided for turbidity or pathogens.

Comment [JC238]: Does this QAPP need to be approved by DEC? If so, please explicitly state this fact.

samples. For non-detect samples, the laboratory minimum detection limits are used to determine the value for a geometric mean calculation.

Guidance for Determining Water Quality Impairments from Pathogens for *Fresh Water Uses*

The numeric criteria for six fresh water uses specified in Alaska's water quality standards for fecal coliform bacteria (18 AAC 70.020) all have an "in a 30-day period" provision and a "not more than 10% of the samples may exceed" provision. Both provisions in the criteria must be met to attain the fecal coliform bacteria standard. (No criterion is specified for the "Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife" fresh water use.)

Minimum Number of Samples

For either the "geometric mean" or "10% of samples" provisions of the criteria, a minimum of 10 samples should be collected in a recommended 30-day period. Data sets for 30 days with fewer than 10 samples are considered insufficient for the purposes of making a determination of water quality standards attainment.

Assessment and Sampling Period

At least two 30-day sampling periods during a 12-month period, preferably in two different seasons, with a minimum of 10 samples in each 30-day sampling period, are considered collectively to be an adequate assessment and sampling period. In each 30-day sampling period, the grouping or overlapping of samples should be avoided, and sampling preferably should be spread over the 30-day period. Data sets that do not have two distinct 30-day sampling periods within a 12 month period are considered insufficient for listing purposes.

Two or more samples may be taken on the same day but should not be taken at the same sampling point. A period of sampling may be established for an impairment when exceedances are dependent on seasonal temperature conditions, heavy water use periods, or both.

Sampling during a range of stream flows, if applicable, is a better representation of all conditions and can identify seasonal conditions that are problematic for fecal coliform, such as ice break-up in the spring. Sampling during peak flow events, such as spring break-up or large rain events, is not desirable because it may not represent a persistent human-caused impact. If it is deemed necessary to sample during peak flow events or spring break-up, the sample data set must contain samples collected during a range of stream flows conditions and results should be compared to other flows for comparison.

Approach for Determining Impairment Caused by Fecal Coliform Bacteria for Fresh Water Uses

The waterbody is considered impaired (e.g., persistent exceedances) when at least two 30-day sampling periods demonstrate an exceedance of either provision of the criterion.

Comment [JC239]: I am not sure what is meant by this statement. Do you mean "When exceedances are dependent on seasonal temperature conditions, heavy water use periods, or both, a seasonal period may be established for the impairment." This is a statement from the marine uses but not mentioned under fresh water uses.

Comment [JC240]: Is this high of a threshold common with other states? If one sampling period exceeded one provision and the other exceeded the other provision, would this be considered an impairment?

Samples collected in two or more 30-day sampling periods are not combined; they are examined separately for comparison with the standard.

The recommended approach is that exceedances found in only one 30-day sampling be followed with an additional 30-day sampling period within 11 months to validate a possible water quality impairment.

Listing Decisions when Exceedances Are Caused by Wildlife/Non-human Sources

DEC will consider whether It should be established that the fecal coliform bacteria levels are from human sources prior to making any determination on waterbody impairment. any consideration of Section 303(d) listing as impaired. A waterbody is not Section 303(d) listed as impaired if it can be proved that the exceedance is due to natural conditions (such as wildlife). DEC will make aA determination about natural conditions based on requires well-reasoned best professional judgment combined with information or data to validate the condition. A decision to not list a waterbody because exceedances are from natural conditions requires, at a minimum, identification of a natural source that is likely responsible for producing the exceedances and information to support the absence of human impacts or no human impacts that exceed the allowable limits. Wilderness areas or other areas with no significant human impact are assumed to represent natural conditions.

Guidanace for Determining Water Quality Impairments from Pathogens for *Marine Water Uses*

Fecal coliform bacteria criteria are specified for six of the seven marine water uses. The numeric criteria for five uses specified in 18 AAC 70.020(b) for fecal coliform bacteria all have an "in a 30-day period" provision and a "not more than 10% of the samples may exceed" provision. Both provisions must be met to attain the fecal coliform bacteria standard. (No criterion is specified for the marine water use for "Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife" marine water use.)

A fecal coliform bacteria criterion specified for the "Harvesting for Consumption Raw Mollusks or Other Aquatic Life" marine water use is different from the other five marine water uses. In addition, EPA has established additional criteria for enterococci for Alaska for the primary contact recreation use in Alaskan marine waters. These criteria are discussed below.

Minimum Number of Samples

For either the "geometric mean" or "10% of samples" provisions of the criteria, a minimum of 10 samples should be collected in a recommended 30-day period. Data sets for 30 days with fewer than 10 samples are considered insufficient data sets for the purposes of making a determination of water quality standards attainment

Assessment and Sampling Period

At least two 30-day sampling periods during a 12 month period, preferably in two different seasons, with a minimum of 10 samples in each 30-day sampling period, are considered

collectively to be an adequate assessment and sampling period. In each 30-day period, the grouping or overlapping of samples should be avoided; sampling should be reasonably spread over the 30-day period. However, two samples in one day are acceptable but should not be taken at the samepling sampling point. When exceedances are dependent on seasonal temperature conditions, heavy water use periods, or both, a seasonal period may be established for the impairment.

Approach for Determining Impairment Caused by Fecal Coliform Bacteria for Marine Water Uses

The waterbody is considered impaired (e.g., persistent exceedances) when at least two 30-day sampling periods demonstrate an exceedance of either provision of the standard. Samples collected in two or more 30-day sampling periods are not combined; they are examined separately for comparison with the standard.

Criterion for the "Harvesting for Consumption of Raw Mollusks or Other Aquatic Life" Marine Water Use

The Alaska water quality standard criterion for the "Harvesting for Consumption Raw Mollusks or Other Aquatic Life" marine water use is worded as follows: 1

Based on a 5-tube decimal dilution test, the fecal coliform median MPN may not exceed 14 FC/100 ml, and not more than 10% of the samples may exceed a fecal coliform median MPN of 43 FC/100 ml. Or based on a 12-tube single dilution test, the fecal coliform median MPN may not exceed 14 FC/100ml, and not more than 10% of the samples may exceed a fecal coliform median MPN of 28 FC/100ml.

Minimum Number of Samples

A minimum of 15 samples should be collected for assessing attainment of the "Harvesting for Consumption Raw Mollusks or Other Aquatic Life" use. The collection of the water samples should generally be planned or scheduled to capture the rainy months and the dry months, as well as high and low tide variables. Ideally the samples capture various hydrological and meteorological conditions that might have an impact on the water quality. In addition to the water sampling, a shoreline survey is required to determine potential pollution sources on shore. A typical water classification survey takes at least 12 months. A minimum of 30 samples should be collected under various environmental conditions in growing areas where pollution sources may have an impact on the water quality.

Approach for Determining Impairment

A waterbody is considered to not be attaining the fecal coliform bacteria standard when either provision of the standard is exceeded for the "Harvesting for Consumption Raw Mollusks or Other Aquatic Life" marine water use.

Comment [JC241]: What does this abbreviation stand for? Is it really "most probably number" (shown on footnote) or most probable numer"?

Comment [JC242]: Confusing as to when a minimum of 15 samples vs 30 samples must be collected. Please clarify.

Comment [JC243]: Growing areas for what?

¹ The abbreviations in the regulatory language are defined as follows: MPN, most probably number; FC, fecal coliform; and ml milliliters

Criteria for Marine Water Use for Coastal Recreation Areas (Primary Contact)

The federal Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000 specifies the following water quality criteria for coastal recreation (primary contact) in marine waters:

Geometric mean of 35 enterococci per 100 ml shall not be exceeded.

Or

A single sample maximum (per 100 ml) of 158 Enterococci shall not be exceeded.

This standard was promulgated by EPA for Alaska in 2004 and published in the *Federal Register* in 69 FR 67217-67243.

Minimum Number of Samples Required for Coastal Recreation Areas

At least two 30-day sampling periods during a 12 month period, with a minimum of five samples in each 30-day sampling period, are necessary to provide an adequate assessment and sampling period for coastal recreation (primary contact) areas in marine waters. In the 30-day period, samples should not be grouped; instead, they should be reasonably spread over the 30-day sampling period. However, two samples in one day are acceptable but should be taken at the same sampling point. When exceedances are dependent on seasonal temperature conditions, heavy water use periods, or both, a seasonal period may be established for the impairment.

Laboratory Methodology for Enterococci

The standard method (EPA Method 1600) for enterococci analysis must utilize the mEl medium or other method approved by EPA for CWA purposes.

Approach for Determining Impairment for the Marine Water Coastal Recreation (Primary Contact) Use Areas

The waterbody is considered impaired (e.g., persistent exceedances) when at least two 30-day sampling periods demonstrate an exceedance of either provision of the criterion. Samples collected in two or more 30-day sampling periods are not combined; instead they are examined separately for comparison with the standard.

Listing Decisions when Exceedances Are Caused by Wildlife/Non-human Sources

It should be established that the fecal coliform bacteria levels are from human sources prior to any consideration of Section 303(d) listing as impaired. A waterbody is not Section 303(d) listed as impaired if it can be proved that the exceedance is due to natural conditions (such as wildlife). A determination about natural conditions requires well-reasoned best professional judgment combined with information or data to validate the condition. A decision to not list a waterbody because exceedances are from natural conditions requires, at a minimum, identification of a natural source that is likely responsible for producing the exceedances and information to support the absence of human impacts or no human

Comment [JC244]: This statement differs from the others. The other ones state "two samples in one day are acceptable but should not be taken at the sme sampling point." Is this true for coastal recreation area too?

Comment [JC245]: Since this holds true for all of the pathogen criteria, maybe you should include this paragraph upfront (before describing all of the differing types) rather than repeating it again and again

impacts that exceed the allowable limits. Wilderness areas or other areas with no significant human impact are assumed to represent natural conditions.

Guidance for Detrmining Water Quality Impairments from Residues

NOTE: The information in this section does not provide a complete description of the specific considerations for waters impaired by residues; Appendix G, (Alaska's Interpretation of of the Residues Criterion with Alaska's water Quality Standards (18 AAC 70) Regarding Attainment and Impairment Determinations) should be consulted for additional detail that more fully explains the considerations.

A seafood processing or log transfer facility (LTF) in Alaska is typically issued a "zone of deposit" (also known as ZOD) in its permit for the residues discharges. Exceedance of a permitted ZOD is not equivalent to impairment; rather, the impairment standard is exceedance of 1.5 acres of continuous residues coverage.

For Category 5/Section 303(d) listed waters associated with a permitted facility, if the areal extent of continuous cover is not declining in size, DEC initiates permit modification or TMDL development.

Seafood Processing Facilities

A waterbody associated with a seafood processor with that has a current ZOD authorization and where with two or more dive survey reports that document an area of seafood waste larger than 1.5 acres is placed in Category 5. Exceptions are waterbodies for which ZODs were authorized at greater than 1.5 acres and situations in which the facility is subject to an administrative action (such as a Compliance Order or Consent Order by Decree for residues) to ensure attainment of water quality standards. In the latter instance the waterbody may be considered for placement in Category 4b. For seafood piles that are legacy sites (and not current dischargers) and that are determined to be more than 1 acre of continuous residue coverage, the affected waterbody may be considered for Category 5 listing. This exception condition occurs because at the time the contributing facility was permitted a 1-acre impairment standard was in effect and the current 1.5-acre impairment standard had not been adopted.

Log Transfer Facilities

A waterbody associated with an LTF with that has a current ZOD authorization is placed in Category 5 if two or more consecutive dive survey reports document more than 1.5 acres of continuous residues coverage and the residue coverage is greater than 10 centimeters at any one point, unless DEC has approved a remediation plan for that waterbody. A waterbody associated with an LTF is placed in Category 5 when an LTF permittee has failed to implement an approved remediation plan in accordance with ing to its schedule.

Comment [JC246]: You may want to develop a reference chart with each situation and its specific requirements for listing and delisting since this can be very confusing just trying to understand the differences using just the narrative.

Comment [JC247]: Except for residues without current operators and listed prior to the 2002 list.

Comment [JC248]: Please revise. Confusing as written

Comment [JC249]: Is this "and" or "or"?

<u>DEC considers</u> <u>Exceptions are</u> waterbodies for which ZODs were authorized at greater than 1.5 acre, which are considered on a case-by-case basis.

If DEC approves a remediation plan on a Category 5 listed waterbody that is reporting more than 1.5 acres of continuous coverage of bark on the bottom before preparation of the next Section 303(d) list, the waterbody remains in Category 5 is placed in Category 4(b). Moving a Category 5 water to Category 4b requires EPA approval.

A waterbody associated with a facility operating under either of the general permits applicable to LTFs for which continuous coverage of residues over 1.5 acres are being reported is considered for a Category 5 listing if one of the following conditions is met: (1) the permittee failed to submit a remediation plan, or (2) a remediation plan has been submitted, but the permittee is failing to implement or is not meeting milestones set forth in the approved remediation plan.

A waterbody associated with an LTF for which no currently permitted or active discharge to the water is occurring, but for which the last known dive survey reported more than 1.5 acres of continuous residues coverage on the marine seafloor, will be placed on the Category 5 list.

Removal of Waterbodies Determined to be Impaired from Residues from the Category 5 List

The following protocols are applied to all waterbodies associated with a permitted facility and Category 5 listing for residues, regardless of whether an active discharge is occurring on site.

- In addition to consideration of the continuous residues coverage standard of 1.5 acres, DEC may consider biological assessment information, such as sediment profile imaging, in a determination to remove a water on the Category 5 list for residues
- For waterbodies placed on the Category 5 list after 1998 and determined to be impaired for residues based on the results of two or more dive surveys:

DEC requires two consecutive dive surveys documenting that continuous residues coverage is no more than 1.5 acres before the waterbody is eligible for removal from the Category 5 list and for placement in Category 1 or 2.

 For waterbodies placed on the Category 5 list in 1998 or earlier (based on 1.0 acre) and determined to be impaired for residues based on the results of <u>one</u> dive survey or best professional judgment:

DEC requires one dive survey documenting that continuous residues coverage is no more than 1.0 acre before the waterbody is eligible for removal from the Category 5 list and placement in Category 1 or 2.

Comment [JC250]: Is this only true for waters on the 2002 list or after? I thought if the waterbody was on the 1998 list or before, the threshold for impairment was 1 acre.

Comment [JC251]: Where does the 10 cm in depth at any point come into play with listing and delisting determinations?

Comment [JC252]: Shouldn't this also hold true for adding a water to the list?

I.Supplement Listing Methodology